EXD. R

Vol. 88. Part 1. Pp. 1-56, 1 pl. 31st January, 1939.

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TRANSACTIONS

OF THE

ROYAL ENTOMOLOGICAL SOCIETY

OF

LONDON

World List abbreviation: *Trans. R. ent. Soc. Lond.*

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LONDON:
PUBLISHED BY THE SOCIETY AND
SOLD AT ITS ROOMS, 41, QUEEN'S GATE, S.W.7

Price 15s. 0d.

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TRANSACTIONS

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ROYAL

ENTOMOLOGICAL SOCIETY

OF LONDON

VOL. 88. 1939.

THE LEPIDOPTERA OF THE LEBANON: WITH NOTES ON THEIR SEASON AND DISTRIBUTION

By R. E. ELLISON and E. P. WILTSHIRE.

WITH PLATE 1.

(Read 1st June, 1938.)

THIS paper is an attempt to provide an annotated list of the species and forms of butterflies and moths known to occur in the Lebanon range and its fringes, from the Mediterranean coast on the west to the Bekaa plain on the east. The region covered may roughly be described as that which is accessible from Beirut for short visits of two or three days. As regards the Anti-Lebanon, much of which is still unexplored by entomologists, the species known by us to occur there have been briefly mentioned, but in cases where they are not known from the Lebanon proper they have been put in square brackets. Records from the Syrian desert, and from Cyprus and Palestine have only been included where they are of interest for comparison with a Lebanon form. Our visits to the Syrian desert and North Syria were so cursory that to include in this paper the species taken on those visits would spoil the homogeneous picture which the paper should present, nor would it adequately represent the fauna of the wider area, namely the territories under French Mandate.

One or other of the authors was stationed in Beirut during most of the period from 1927 to 1934; Ellison paying special attention to Rhopalocera, Wiltshire to Heterocera. For this reason the portions of the list dealing with these two groups have been compiled separately by each author. We have examined each other's collections, we have read each other's MSS.; and we have made suggestions to each other, many of which have been adopted. But beyond that, each author is solely responsible for the part which bears his name, and for any original descriptions contained in it, unless some other author's name is appended.

The list is, of course, principally based on our own captures, and the notes on season, distribution, etc., are mainly the fruit of personal experience. But we have consulted earlier records, and embodied those of the accuracy of which we are convinced. Unfortunately many of them need closer scrutiny before they can be accepted. In the first place, identifications based on knowledge available in 1850, or even 1900, may be most misleading in 1936: without

access to the actual specimens responsible for these old records, we must regard many of them as suspect. Secondly, early collectors seem to have labelled their specimens in a way which it is charitable to describe as casual. "Syria" is used to cover a vast area including the Taurus, Syria, Palestine, Sinai, and half Iraq; and "Beirut" may mean anything from the sea coast to the highest peaks. Even in original descriptions one cannot always be quite certain that the localities given are correct. We have therefore used brackets in some cases where we are not convinced of the correctness of a record; in others, we have omitted it entirely. Failure to do this has unfortunately marred Amsel's faunal list of Palestine Lepidoptera, at least as regards the macro-Heterocera; this work, however, is indispensable to students of distribution and comparative faunology, and should be of absorbing interest to all naturalists in the Near East; the general principles given in its first part are of great scientific importance, and no doubt the very full list of Palestinian Microlepidoptera (Amsel's special field) can safely be relied upon to prove his points, so that the several suspect records in the Macrolepidoptera do not materially affect the issue.

A bibliography of previous records will be found in a paper on the Lepidoptera of the northern Lebanon (Bsherre district) by Dr. Zerny (*Iris* **46–48**, 1932–34), and to save space we do not reproduce it. It refers only to the mountainous part of the Lebanon, and needs to be completed by the addition of two earlier papers by Lederer (1855, *Verh. zool.-bot. Ver. Wien* **5** : 187, and 1857, *Wien. ent. Monats.* **1** : 90), which refer to Beirut and its neighbourhood. Amsel's work, referred to in the previous paragraph, was published in 1933, *Zoogeographica* (**2** (1)). A few reliable records of GEOMETRIDAE for the Lebanon were also given by Wehrli in his work on Pfeiffer's Marash material (1934, *Mitt. Münch. ent. Ges.* **24**).

The principal published lists of the Lebanon fauna are those of Lederer, Nicholl, Graves and Zerny; the second and third of these deal with Rhopalocera only. Lederer's lists contain several species not since confirmed; in view of possible doubt about the labelling, we have thought it best to bracket these. Mrs. Nicholl's identifications are sometimes doubtful, especially in the LYCAENIDAE; Elwes evidently felt uncertain of several of them. The work of Graves and Zerny is more up-to-date and therefore more reliable. Of the less important papers, Calberla's refers chiefly to the borders of the desert, but contains a few references to the Lebanon. Herzog's work is marred by so many mistakes (e.g. *Gonepteryx rhamni* ♀ for *G. cleopatra*, unless his labelling was hopelessly wrong) that we have practically ignored it; and Miss Fountaine's is chiefly interesting as recording one or two species not mentioned elsewhere.

In addition to the published lists, we have seen the collection in the American University, Beirut, formed chiefly by the late Professor Day. It contains several specimens of considerable interest, as well as some, labelled "Cremona, Beirut", which reflect unfavourably on the reliability of similar pre-war records. (Vide *Maculinea arion* L.)

Many of the misidentifications in old lists (e.g. *Carcharodus altheae* for *C. orientalis*, *Pyrgus alveus* for *C. armoricanus*) are easily corrected, at least with extreme probability; others (e.g. *Eumenis semele*) are puzzles to which we can find no answer. A typical instance of the confusion caused is the case of *Aricia isaurica*, said by Mrs. Nicholl to be "common all through the Lebanon range from 4000–5000 ft., May and June." Now *A. isaurica* does occur in the Lebanon, but only at a height she did not reach, and at a date long after she had left the country. Graves at first fell into the same trap (and it is a trap), but in a later paper he mentioned Mrs. Nicholl's specimens when describing a

new form of *Polyommatus candalus*. Clearly all Mrs. Nicholl's references to Lebanon *A. isaurica* must really be referred to *isauricoides* Graves. The specimens of "*candalus*" in the American University collection, seen by Elwes, may, or may not, have been *P. icarus juno*.

Our own identifications would have been very doubtful (in fact, this paper could not have been published) had we not been so fortunate as to secure the assistance of well-known British or continental specialists in some of the more difficult groups, and to them we should like to express our indebtedness. As regards Rhopalocera, we owe much to Major P. P. Graves, whose advice and assistance has been given in ways too numerous to mention; to Brigadier Evans, who has examined the genitalia of several doubtful forms and given advice on the HESPERIIDAE; to Mr. Francis Hemming, who identified some difficult LYCAENIDAE and HESPERIIDAE; and to Herr Georg Belter, who has enabled us to distinguish the difficult species of *Melitaea* of the *M. didyma* group. For Heterocera we are indebted to Messrs. Charles Boursin, F. Le Cerf, the late Edward Meyrick, Louis Prout, H. Stringer, and W. H. T. Tams, to Drs. Bytinski-Salz, Zerny, Amsel, Naufock, and Warnecke, whose names, with any remarks they have to add to their determinations, are given after each species determined by them. We have also to thank the President and staff of the American University, Beirut, for the help and facilities granted to us, and the local entomologists, Mr. Henry Glockler and Brother Cremona, for their assistance in the field.

Thus, we have tried to steer a middle course between, on the one hand, giving a mere list of our own captures—interesting, perhaps, but incomplete—and, on the other hand, including without careful scrutiny records the accuracy of which there could be any question. When in doubt we have preferred to bracket, or even exclude. We believe that our list of Rhopalocera includes all the species known certainly to occur in the area. We have aimed at a similar completeness in the macro-Heterocera, though we must have fallen far short of it. But in our list of Pyrales and Microlepidoptera we do not claim even to have aimed at it, and the third part of this paper must be regarded in a different light, viz. as no more than an independent contribution to the knowledge of the Lebanon fauna. It may well be that future students, as knowledge of the "smaller fry" progresses, will find as many errors in it as we now find in 19th-century work on the better-known families. But we have thought our records sufficiently interesting to be worth attaching to those of the Macrolepidoptera, even if they prove to be less sound.

Detailed descriptions by Wiltshire of the early stages of certain species have already been published (1935, 1936, *Ent. Rec.* **47–48**). Of the other species, the biology of which is better known, the season and food-plant are sometimes briefly given in our list, but a detailed description is not given.

For those interested in the ecology of insects and the adaptation of forms to local scenery, we are enabled by the invaluable co-operation of Professor W. A. West, of the American University, Beirut, to add a geological foreword and an account of the various localities mentioned in our list.

For entomologists desirous of filling gaps in our knowledge of Syria as a whole, rather than merely duplicating researches in localities already worked, we suggest work from two centres: Lattakia and Damascus. From the former, and from its hill-station, Slenfé, the Alawite mountain might be explored; and from the latter, Mt. Hermon, the Anti-Lebanon, the Jebel Druze, and the desert. Finally, the southern part of the Lebanon might be studied from Sidon. But even the more accessible parts of the range dealt with in this paper still contain much unworked ground. There is probably not much to be added to our list

of Rhopalocera; but there is no doubt that the list of Heterocera could be very greatly extended; the compilation of a comprehensive micro-fauna should be the aim of the next entomologist who decides to work over the same ground as ourselves.

Explanations of Abbreviations

(other than abbreviated authors' names).

( ) Doubtful record, needing contemporary confirmation.
[ ] Anti-Lebanon; no certain record from Lebanon.

(Led)	Recorded by Lederer.
(Cal)	,, Calberla.
(N)	,, Mrs. Nicholl.
(F)	,, Miss Fountaine.
(G)	,, Graves.
(Z) or (Zy)	,, Zerny.
(E)	,, Ellison.
(W)	,, Wiltshire.
A.U.	American University (of Beirut).
(det. Ams)	Determined by Amsel.
(det. B-S)	,, Bytinski-Salz.
(det. Brsn)	,, Boursin.
(det. le C.)	,, le Cerf.
(det. Meyr)	,, Meyrick.
(det. Nauf)	,, Naufock.
(det. Prt)	,, Prout.
(det. Str)	,, Stringer.
(det. Tams)	,, Tams.
(det. Warnecke)	,, Warnecke.
(*1935)	Early stages described in 1935, *Ent. Rec.* **47.**
(*1936)	Early stages described in 1936, *loc. cit.* **48.**
J (Brsn)	Received by Boursin from Jezzin (S. Lebanon), *c.* 2800 ft.
T (Brsn)	Received by Boursin from Toura (S. Lebanon), *c.* 3000 ft.

Species or Forms New to Science.

The following Heterocera have been described as new to science from our material.

A. By C. Boursin (1936, *Bull. Soc. ent. Fr.* **41** : 91, 93).
Athetis hedychroa.
Athetis vicina rosea.

B. By C. Boursin (1936, *Bull. Soc. ent. Fr.* **41** : 225).
Athetis amseli (and from other material).
Rhyacia iobaphes.

C. By Dr. H. Bytinski-Salz (1936, *Ent. Rec.* **48** (Suppl.)).
Bryophila ravula mediochracea.
Amathes hypotaenia wiltshirei (and from other material).
Archanara wiltshirei brunnea.
Praestilbia armeniaca designata.
Zygaena corycia wiltshirei.

D. By the late E. Meyrick (1936, *Exotic Microlepidoptera* **5**).
Crambus chrysocrossis.
Surattha obeliscata.
Melissoblaptes opticogramma.

Scoparia coprista.
Phtheochroa psychodora.
Euxanthis anticyphas.
Laspeyresia exosticha.
Limnoecia copidobathra.

E. By Louis Prout (*in* Seitz, *Macrolep. World*, Supplement **4**).
Eupithecia quercetica.

F. By W. H. T. Tams.
Macrosia wiltshirei sp. n.

G. By E. P. Wiltshire.
Euxoa heringi maronitica subsp. n.
Amathes macilenta rubrescens subsp. n.
Dasycorsa modesta astigmatica ab. n.

H. By C. Boursin (1937, *Ent. Rdsch.* **54**: 431).
Elaphria ellisori (and from other material).

REPRESENTATION OF THE DIFFERENT FAMILIES.

Some 750 different species, known certainly to occur in the area dealt with, will be found in the list that follows. The distribution of these into their respective families is as follows :—

Rhopalocera	134	species.	
SPHINGIDAE	16	,,	
Procris, Zygaena and *Syntomis*	14	,,	
NOLIDAE	5	,,	
LITHOSIINAE	5	,,	
ARCTIIDAE	6	,,	
LYMANTRIIDAE	7	,,	
LASIOCAMPIDAE	9	,,	
Other "Bombyces"	8	,,	
COSSIDAE	7	,,	
AEGERIIDAE	6	,,	
PSYCHIDAE	6	,,	
NOCTUIDAE	244	,,	(not including *Derthisa* spp.)
GEOMETRIDAE	119	,,	
PYRALIDAE	118	,,	
Microlepidoptera	53	,,	
Total	757	,,	

GENERAL GEOLOGICAL FOREWORD.

By Professor W. A. WEST.
(*American University, Beirut.*)

Syria consists of two chains of mountains running north and south parallel with the coast, the Lebanon and the Anti-Lebanon, separated by a level plain, the Bekaa, which is three or four miles wide, and has an altitude of about 3000 ft.

Geological Formations.

1. Jurassic limestone, of undetermined thickness, the lower contact of which is visible only at one point, south-east of Hermon. The rock is usually hard and massive, and accounts for the canyon-like topography of the deeper valleys of the Lebanon.

2. Lower Cretaceous sandstone, usually associated with shales. It frequently contains lava, basalt, or volcanic tuff. Its thickness in the Lebanon is a few hundred feet, and in the Anti-Lebanon even less, but it has a disproportionate importance from the topographical, botanical, and agricultural point of view. Also, the positions of many springs are determined by its beds of shale and clay.

3. Upper Cretaceous limestone, for the most part less massive than the Jurassic, although some horizons form steep cliffs 2000–3000 ft. thick.

4. Tertiary limestones. These appear along the coast, especially south of Tripoli and near Sidon. A similar series appears on the east side of the Lebanon north of Zahle, and also along the western edge of the Anti-Lebanon.

5. Quaternary deposits. These include the alluvial lake-bottom soil of the Bekaa and the Zebedani valley, the Damascus plain, and the aeolian sandstone and dunes of the coastal promontories.

6. Recent lava flows. These cover an immense area south and east of Damascus, and also form the low hills immediately north of the Lebanon proper.

Throughout the country the predominant soil is heavy red clay, the characteristic end-product of decomposing limestone, the only exceptions being the limited areas consisting of sandstone or volcanic rock.

Geological Structure.

Along the western edge of the Lebanon is a steep monocline accompanied by faults. Just north of Beirut this fold (in the Cretaceous limestone) rises almost from the sea, but elsewhere it is at varying distances from the coast, and may be obscured by the Tertiary deposits mentioned above.

North of Beirut the middle heights have been so eroded as to consist almost entirely of Jurassic limestone, while the higher ridge to the east is Upper Cretaceous. The latter falls rapidly away to the east with a steep dip and an extensive fault.

South of Beirut the middle heights are Upper Cretaceous, the sandstone appearing only in the valleys, and the Jurassic being barely touched. The high ridge to the east, however, is entirely Jurassic limestone, and is cut off sharply on its east side by a fault. Directly east of Beirut is a transition area, where the middle heights consist of limestone hills capped with sandstone.

The Bekaa itself was a lake in late Tertiary times, but has been completely drained, and is now dry except for local swamps near springs.

East of the Bekaa the Tertiary and Upper Cretaceous limestones rise steeply from the level valley floor, thus leaving the latter as a trough valley, which is actually a continuation of the Jordan Rift. Southern Anti-Lebanon is analogous to southern Lebanon, the main ridge of Hermon being Jurassic, while the lower hills between it and the Bekaa are Cretaceous. The rest of the Anti-Lebanon is mainly Cretaceous, but in the neighbourhood of Zebedani occur two magnificent series of cliffs, fault-scarps in the Jurassic limestone. To the east of the Anti-Lebanon steep dips and faults cut off the Cretaceous and Tertiary limestones from the Damascus plain.

Description of Localities.

Little need be added to Professor West's geological foreword. In places the seashore of the Lebanon is rocky, but generally a plain, varying in width, separates the sea from the hills. This plain is usually fertile and well cultivated, but with sand dunes in places. The air here is humid, and in summer there is little variation in temperature at sunset. Winters are mild, rather cold in

January, and heavy rains fall between November and April. The average rainfall here is about thirty inches, all of which falls during the winter months. The rainfall is as heavy along the whole western face of the Lebanon range, and, at Shweir, Kartaba, and other high places to the north, even heavier. Snow lies for short periods every winter at 4000 ft. and higher. The middle heights of the Lebanon are fairly well wooded, and crested with summer resorts and villages. The air here is less oppressive in summer, but mists are frequent. Higher up, the mountains are barer, the air drier, and variation between day and night temperature very pronounced. The Bekaa plain and the interior are drier and possess fewer trees: snow lies on it every winter, though of course not for so long as on the high peaks of the Lebanon. Extremes of temperature characterise the Anti-Lebanon and the vast plateau of the Syrian desert, though here the dry atmosphere makes snow rarer. The Anti-Lebanon's heights are, however, regularly snow-clad in early spring.

Coast Localities (Lebanon).

A. *Beirut.* This was the centre from which we both worked. It has three kinds of field :—

1. Delta, partly cultivated.
2. Sands, characterised by clumps of *Saccharum egyptiacum*, and planted in places with stone-pine. "Calcareous aeolian sandstone (Quaternary) and dunes of loose red sand."—West.

   These dunes are the northerly outliers of what is in Palestine a continuous faunal region. On them typically desert-dwelling species intrude into an otherwise East Mediterranean fauna. The dunes occur still farther north, at Tripoli, and probably at other places along the Syrian coast as far as the bay of Alexandretta, but we have only worked those immediately south of Beirut.
3. Scrub-grown rocky ground or barer limestone cliffs (Miocene limestone —West), characterised by Carob, terebinth, asphodel, *Quercus coccifera*, *Poterium spinosum*, *Calycotome villosa*, *Rubia olivieri*, etc. Most of this has been overbuilt, but a little still remains in the American University grounds. The highest ground is not more than 300 ft.

B. *Ghadir.* S. of Beirut. Dune sand; palms, willow, tamarisk.

C. *Khalde.* Ditto. Dune sand; olive groves, and low cliffs of Upper Cretaceous limestone.

D. *Junie.* North of Beirut, a bay under towering wooded Upper Cretaceous limestone hills which go steeply up to 1500 ft. Low Miocene limestone hills south of the town.

E. *The Rivers.* From north to south these are :—

Nahr Ibrahim (Adonis River). Wooded limestone gorge.

Nahr el Kelb (Dog River). Ditto, with *Pinus halepensis* some miles inland, at "middle height" level.

Nahr Beirut. A smaller river, its sides planted with stone-pine in places (an introduced tree, not native).

Nahr Dammur. Judas trees, terebinth, *Teucrium*, etc.

These valleys, in their broader parts, are cultivated by irrigation, and grow banana, and other crops of the coast plain, towards their mouths. On their steep limestone cliffs the fauna and flora typical of the middle heights comes down to sea-level, resembling Beirut (3), which, however, is an isolated outlier. In the river beds grow plane, willow, and tamarisk.

F. *Asfuriyeh.* Transitional to middle heights, the first locality on the eastward road from Beirut to Damascus. Upper Cretaceous limestone; few indigenous trees. Height: 500 ft.

MIDDLE HEIGHTS.

A. *Luize.* Immediately above Asfuriyeh. Upper Cretaceous limestone. Thick scrub of *Quercus coccifera* (but not yet *Q. lusitanica*), terebinth, *Crataegus, Rubia, Calycotome, Poterium.* These are found throughout the middle heights. Height: 1000 ft.

B. *Arayah.* Next above Luize on the Damascus road. Lower Cretaceous sandstone and lava, with slopes of Upper Cretaceous limestone and steep cliffs of Jurassic limestone in the gorge below. Some terrace cultivation. Some fair-sized *Quercus lusitanica*, and *Styrax, Hypericum serpyllifolium, Cistus*, on humid, overgrown terraced slopes. Height: 1700 ft.

C. *Aley.* Bare Upper Cretaceous limestone hills, with one good oak wood; broom. Height: 2500 ft.

D. *Bhamdoun.* Bare Upper Cretaceous limestone hills, with a few oak and *Styrax* on terraces; broom. Height: 3500 ft.

E. *Baabda.* South of the road. Upper Cretaceous limestone hills, aleppo pine. Height: *c.* 2000 ft.

F. *Suq el Gharb.* Upper Cretaceous limestone, 2000–2500 ft. Similar to Aley but somewhat drier.

G. *Ehden.* On the road from Tripoli to Bsherre. High and cool; limestone formations as at Arayah, with many cypresses. Height: 4500 ft.

H. *Ejba* and *Aitou.* Below Ehden on the Tripoli road. The former is an almost treeless Upper Cretaceous limestone hillside, with irrigated wheat fields; the latter, also limestone, has oak, aleppo pine and cypress. Height: *c.* 3000 ft.

I. *Hasroun.* Between Bsherre village and Hadeth, and similar fauna and flora to the former (*vide* "Bsherre Cedars").

J. *Kartaba.* Near the headwaters of the Adonis River; well-wooded limestone hills of similar strata to those at Arayah. Oak, aleppo pine, *Styrax.* Height: 4500 ft.

K. *Afka.* Opposite Kartaba, source of the Adonis River. Steep Upper Cretaceous limestone scarp with caves and with some sandstone appearing below. The backbone of the Lebanon (called Dahr el Qadib farther north) runs above this locality and here bears the name of Jebel Meneitri, which links the Cedar Mt. with Jebel Sannin. Walnut, terebinth, buckthorn, etc. Height: 4000 ft. Still farther south, on a ridge between the Dog River and the Beirut River, are three good localities:

L. *Shweir.* The northernmost of the three. Lower Cretaceous sandstone capping the hills and Jurassic limestone in the gorge below. The outcropping sandstone is thickly planted, as in most of the Lebanon, with Italian stone-pine. These woods have an undergrowth of *Cistus*, Mediterranean heather and a scrub juniper. The limestone ground is in parts terraced for vine and other cultivation (the soil, as typically in the Lebanon, is red, even where the rocks are grey) or wooded with oak, with a plentiful growth of broom, sumac, *Styrax, Hypericum, Calycotome* and terebinth. Height: 4000 ft.

M. *Brummana.* Similar to Shweir, but with a predominance of sandstone and pine, and situated lower down, facing the sea. Many gardens. Height: 2300 ft.

N. *Beit Meri.* South of Brummana. Similar ground, terraced, but rather drier than Shweir. Stone-pine, oak, cypress. Height: 2300 ft.

The following places are transitional between middle and upper height:

O. *Biskinta.* East of Shweir, on a shoulder of Sannin. Limestone and sandstone. Height: 4000 ft.

P. *Hammana.* Under the south-western shoulder of Kineseh. Limestone. Height of the village: 3500 ft., but species caught here and so labelled may be anything up to 4500 ft.

N.B.—The Lebanon south of Barouk and Dammur has not been worked by us; the district around and east of Sidon would probably prove transitional in fauna between Lebanon and Palestine.

Q. *Ain Sofar.* On the main road above Bhamdoun, and below Dohr el Baida. Height: about 4000 ft.

Upper Heights.

These begin, speaking technically, at altitudes where the oak and pine cease to grow. The characteristic trees and shrubs are: cedar, *Quercus cerris* (on Jebel Barouk), wild cherry, wild apricot, willow (at springs), and *Berberis cretica*, *Astragalus*, etc.

From north to south the localities in this zone are:

A. *Bsherre Cedars* and "*Cedar Mountain.*" The village itself is in the middle height zone and we have not worked it. Many of Zerny's records, however, come from here, and where "Bsherre" alone is given as the locality, the village is meant. The Cedars (Arz el Rab) stand above the famous Kadisha caverns on a shelf of calcareous glacial material brought down from the Upper Cretaceous limestone above; they are a compact grove of old trees enclosed by a wall and dwarfed by the Cedar Mountain, which encircles them in a horseshoe formation and the two highest points of which exceed 10,000 ft. (Fam el Mizab and Qurnet el Sauda). The Cedars themselves stand at a height of 6300 ft. No goats are allowed in the enclosure; a thing almost unique in the Near East! Red soil lies thick between the limestone rocks, and is partly cultivated, especially lower down. (This is the only authoritatively identified glacial deposit in Syria—West.) Two hotels have been built to accommodate skiers in winter and trippers in summer, and a road is being pushed over the Cedar Mt. itself, which will eventually link Tripoli direct with Baalbek. The mountain is pink and arid, with rounded contours.

B. *Hadeth Cedars.* Similar to Bsherre, but a wilder, more extensive and more mixed forest, reaching to lower altitudes; difficult of access. Upper Cretaceous limestone; 5000 ft.

C. *Jebel Sannin.* Bare limestone mountain. Upper Cretaceous above; peak, 8600 ft.

D. *Wadi Berdaouni.* Drains the eastern slopes of Sannin, which are tertiary limestone.

E. *Zahle.* The town itself stands at the debouchement of the Wadi Berdaouni into the Bekaa plain, where its waters flow southward as the Litane: 3500 ft.

Specimens labelled "Zahle" may either come from typical Bekaa country below the town or from the mountain and valley above.

F. *Jebel Kineseh* (or *Kanisa*). Like Sannin, but not higher than 6800 ft. Under its eastward slopes (Tertiary limestone) is a good locality.

G. *Bwarij*. 4000–5000 ft. Rough limestone hills, decadent vineyards, and some oak and thorn scrub.

H. *Dohr el Baida* is the pass over which the main Beirut–Damascus road runs, south of Kineseh. 5000 ft.

J. *Ain Zahalta*. South of that road. Bare limestone hills, partly cultivated, leading up to a comparatively young cedar wood. At the lower limit, sandstone and stone-pines. Height: 4000–5000 ft.

K. *Jebel Barouk*. A very dry mountain (entirely Jurassic limestone) the highest point of which is nearly 6500 ft., and the upper slopes of which are clad with old cedars and oak. The eastern slopes are thickly wooded with oak and *Styrax* down to Amik marsh. At its westward foot is Ain Barouk, with many willows, the source of the Dammur River. Has only received one visit from us.

The Bekaa Plain (Coele Syria).

This plain forms the northern continuation of the Jordan–Akaba rift, and is described in the geological foreword by Prof. W. A. West.

It resembles the Anti-Lebanon and the upper heights of the Lebanon in its dryness and general colouring. Its height above sea-level is about 3000 ft. Its western slopes produce excellent grapes, but cereals and water melon are the chief crops of the true plain, which is, in the strips near the springs on its edges, irrigated land or reclaimed marshland. Part of it drains northward into the Orontes, part southward into the Litane.

A. *Baalbek*. The northernmost of our Bekaa localities, and the only one north of the watershed. It stands, at 3300 ft., on the lower slopes of the Anti-Lebanon. Willow, poplar, sumac, etc.

B. *Talabaya* and *Ksara*. These are much cultivated, and are intermediate between Shtorah and Zahle; Ksara is the collecting centre of Brother Cremona and is a Jesuit wine-producing establishment and observatory. Height: 2900 ft. In features they resemble Shtorah, but Ksara has less trees.

C. *Shtorah* (Fr. *Chtaura*). Water from Jebel Kineseh is plentiful, and there are many willows, poplars and ash trees. Height: 2900 ft.

D. *Anjar*. A slight marsh, with water-loving trees, at a stream that springs from the slopes of the Anti-Lebanon east of Shtorah. On these slopes grow *Poterium* and scrub oak, badly stunted by goats. Height: 2800 ft.

E. *Amik*. Marshes at the foot of Jebel Barouk, characterised by reed and yellow flag, and planted, along the dykes, with ash, willow and poplar. Height: about 2500 ft. It is planned soon to drain this fen.

Anti-Lebanon.

This range has received only flying visits from us. It is of Upper Cretaceous Jurassic limestone, Lower Cretaceous sandstone and some basalt, and almost treeless. Characteristic plants are spurge, valerian and *Scrophularia xanthoglossa*.

A. *Neba Barada*. Source of the Barada, which flows through Damascus. A few willows grow here, and reeds and rushes. It is encircled by barren limestone hills, but lies actually in the red soiled Zebdani valley. Height: 3500 ft.

B. *Bludan.* Above Zebdani, half-way up Jebel Yunan. Characterised by hedges of *Paliurus spina-christi* and many orchards of almond, apple and apricot; also poplar and willow. The junipers on the mountain have long since been deforested. Height: 5000–6000 ft.

"The village stands at the edge of a long slope composed of debris from the Lower Cretaceous sandstone and basalt which occupy the valley above. The high ridge to the east is Upper Cretaceous limestone. Beginning near the village and running north for miles is an almost unbroken cliff of Jurassic limestone, facing west, a magnificent fault-scarp, having a throw of at least 3000 ft."—West.

Other Parts of Syria.

We have omitted from our list such species as *Metopoceras delicata* Stgr., and *Armada panaceorum* Mén., recorded by us from the desert, or such as *Eulia asinana* Hb., taken in North Syria; but in one or two cases localities in these areas are quoted to show the distribution of species occurring on ground more thoroughly worked by us. We give their names here without geological or floral details:

N.W. Syria: Antioch, Aleppo.
Syrian Desert: Palmyra, Deir es Zor.

Part I.

Rhopalocera.

By R. E. Ellison.

Papilio machaon L. (Led, N, G, Z). Widespread from the coast to the highest peaks, but seldom common, especially above 6000 ft. Appears as early as February on the coast, and has at least three broods.

Papilio alexanor Esp. subsp. (?) *maccabaeus* Stgr. (G). Scarce and local in the mountains, 5000–6000 ft., chiefly in a valley N.E. of Ain Zahalta. Late May to early June. The eastern races need more investigation than Staudinger was apparently willing to give them.

Iphiclides podalirius (L.) subsp. *virgatus* (Butl.) (N, G, Z). Infrequent on the coast, but common at middle heights, especially round woods, and on bushy hill tops. Occurs above Bwarij (5000 ft.) in numbers, but this seems to be its vertical limit. Three broods, the first appearing rather later than *P. machaon.*

Thais cerisyi God. subsp. *deyrollei* Ob. (N, G, Z). The Lebanon form is very variable, and I doubt the justification of separating it from subsp. *deyrollei* Ob. It is abundant and widespread from the coast up to at least 5000 ft. Occurs in March on the coast; as late as May in the hills.

Doritis apollinus Hbst. subsp. *bellargus* Stgr. (Led, G, Z). Locally common on the coast in January and February, at middle heights in March (Shweir E, Shemlan W) and in the Bekaa, Kanisa (*c.* 5000 ft.) in early May (E), near Ain Zahalta, very worn, beginning of June (G), Bsherre Cedars (Z).

Parnassius mnemosyne (L.) subsp. *syra* Ver. (= *libanotica* Bryk). (N, G, Z). My specimens all have larger black spots than the type of subsp. *syra* Ver. (in the British Museum), but as the race is very variable in this respect, I have adopted Zerny's view that the forms from the Lebanon and neighbouring ranges form a single race, whose earliest name is *syra* Ver.

Common locally at heights of 4000–7000 ft. through the whole range

in May and early June. Bsherre Cedars (E, Z), Kanisa (E, G), Ain Zahalta (E, W, G) etc.

Aporia crataegi L. subsp. (?) *hyalina* Rober. (Calb, N, G). In similar localities to *P. mnemosyne*, at about the same time. Sometimes very abundant, *e.g.* above Bwarij.

The Lebanon race is remarkable for the pinkish tint of the wing-membrane in the almost scaleless ♀, which is quite unlike any European or African specimens I have seen. This may be an instance of the tendency to reddish coloration so typical of Lebanon forms, particularly amongst the Heterocera. But until I have compared them with true *hyalina* I do not feel justified in separating them.

Pieris brassicae L. subsp. *catoleuca* Rober. Plentiful near cultivation from the coast up to 5000 ft.

Pieris rapae L. subsp. *leucosoma* Schaw. Abundant everywhere.

Euchloë ausonia Hübn. subsp. *crameri* Butl. (Led). Not uncommon at middle heights in April, on open ground. Aleih, Deir el Qamar (E). Only one brood taken.

Euchloë charlonia Donz. subsp. *penia* Frr. (Led, N). In the mountains at about 5000 ft., not usually common. I found it in abundance above Bwarij in May, 1930, but it was much rarer there the following year. It seems doubtful if a winter brood can occur, as it does in north Africa, since the ground is usually snow-covered during the early part of the year.

Euchloë cardamines L. subsp. *phoenissa* Kalchb. (Led, N, G). Fairly common near the coast from the end of February, and at middle heights (Aleih, Shweir, E) in April. The ♂ ab. *umbrosa* Culot, with a black shade inside the orange patch, occasionally occurs.

Euchloë damone Boisd. subsp. *syra* Ver. Locally common at middle heights (Aleih, Deir el Qamar, Ain Zahalta, E) in April. Sometimes found (*e.g.* near Aleih) together with *E. cardamines*. I once saw it near the sea-level at Nahr Dammur, but believe the specimen had been blown down from the neighbouring hills.

Teracolus fausta Oliv. (Led, G). Very abundant on the sea coast from August onwards. Occasional specimens are seen in the earlier part of the summer. Goes up to 4000 ft. unlike *B. mesentina* Cr. (Dlibta, E, Ain Barouk, W). We have not taken anything which seems to correspond with the description of ab. *louisa* Neuburger.

Colias croceus Fourcr. and ♀ ab. *helice* Hübn. Abundant everywhere at all heights.

(*Colias aurorina* H.-S. subsp. *libanotica* Led. Described from " am Gipfel des Libanos " (which ' Gipfel ' ?). No later Lebanon records. In view of the doubtful correctness of old locality labels, I feel that confirmation is required of its occurrence in the Lebanon proper. The mountains near Antioch may possibly produce it).

Gonepteryx rhamni (L.) subsp. *meridionalis* Rober. Ehden and Bsherre, end of June, not common (E). The three ♀♀ recorded by Herzog from Beirut must have been *G. cleopatra* (L.), unless the labels were wrong.

Gonepteryx farinosa Zell. (N, Z?). Bwarij, ♂♂ in May (E), June 3rd (W). South flank of Kanisa, early June, one ♀ (E).

Zerny's record is from the neighbourhood in which I took *G. rhamni* (L.) only. The two are not really difficult to distinguish when seen together. But without seeing Zerny's specimens I cannot feel sure of them. Apart from his record, I should have said that *G. rhamni* seemed to occur chiefly

in the northern Lebanon, and on its western slopes, *G. farinosa* rather on the eastern flank; but both are so scarce that it is not easy to fix their distribution. Odd specimens have a way of upsetting provisional conclusions.

Gonepteryx cleopatra L. subsp. *taurica* Stgr. (Led, N, G, Z). Common at all heights in two broods.

Leptidia sinapis (L.) subsp. *deserticola* Vty. (Led, N, G). A strangely-named race, which occurs (1) in the hot moist valleys near the coast, and (2) locally at middle heights, where it is especially common amongst pine woods. It usually abounds where it occurs. A first brood flies in March and April, a second in June and early July, and in September a third, which only differs from the summer brood by its generally smaller size.

Leptidia duponcheli Stgr. subsp. *xanthochroa* Ver. (N, Z). From Bsherre Cedars (end of June, E) (early June, W) to near the top of the ridge (middle of July, W). Common on the east side of the Cedars range (Z). Once taken at Baalbek (G). A very distinctive race, with its yellow ground-colour.

Catopsilia florella F. I see no reason to doubt Lederer's record from Beirut. Presumably a rare immigrant from the south.

Danaus chrysippus L. (Led, N, G). Locally plentiful on the coast, *e.g.*, by the railway line near Antelias. I have seen it just below Brummana (2000 ft.), but not in large numbers. The chief flight is in June, but specimens occur in early spring, and again in the autumn. I am inclined to look with suspicion on Lederer's records of f. *dorippus* Klug and f. *alcippus* F. from Beirut, as neither has been found in the Lebanon since. Either alone would pass muster (I have seen f. *alcippus* from Cyprus), but it would have been a remarkable stroke of luck to capture both.

Yphthima asterope Klug (Led, N, G). One of the commonest Lebanon species, both near the coast (Beirut, Junie, Dog River, etc.) and at middle heights. May be found practically all the year round, except perhaps in January and February.

Satyrus (*Melanargia*) *titea* Klug (Led, N, G, Z). Abundant at all heights in late May and June on the coast, from June to early August in the mountains. It is very variable, and Elwes was of the opinion that two species were included. I have found no evidence of that, and do not even feel justified in referring the Lebanon form to a special race, since the named "races" are based principally on an increase or decrease in the black markings, and on size, the very points in which individuals vary most.

Hipparchia syriaca Stgr. (Led, Calb, N, G). Abundant in pine woods at middle heights (Areya, Brummana, Shweir, Kartaba, etc.). It may be absent from large parts of a wood and occur in dozens within a few yards. They can always be told from *Eumenis fatua* Frr. at a distance by their habit of settling on tree-trunks, whereas *E. fatua* settles on stones or on the ground.

Eumenis persephone Hübn. (= *anthe* O.) subsp. *transiens* Zerny, and ♀ ab. *hanifa* Nordm. (Led, N, G, Z). Extremely abundant and widespread at middle heights, on open, stony hillsides, from the end of May onwards. They are less common on the central range, but go up to the highest summits. Very common in the Anti-Lebanon in early June (W).

Eumenis telephassa Hübn. (Led, N, G, Z). Even commoner than *E. persephone* Hübn. occurring at the same time and place.

(*Eumenis anthelea* Hübn. Recorded by Lederer without comment or locality. Not confirmed.)

Eumenis pelopea Klug (Led, N, G. Z). Not below about 4000 ft., but common right through the range from that height upwards in June and July, chiefly on bare hillsides.

My specimens include both sexes of two quite distinct forms, but Evans, who has kindly examined the genitalia, tells me that he can find no difference to suggest that they are specifically distinct. They occur together, and both are widely distributed. I prefer not to describe the second form until I can obtain more information about it.

(*Eumenis semele* L. subsp. *mersina* Stgr. Stated by Mrs. Nicholl to be " common on Lebanon in June." I quite fail to understand this record. Had she said " scarce and local " I might have accepted it, though no one else claims to have found *E. semele* in the Lebanon. But as it is, there must be some mistake, though it is difficult to imagine what common species could be mistaken for it.)

Eumenis fatua Frr. subsp. *sichaea* Led. (Led, G). Common on the outskirts of woods, and on stony hillsides, at middle heights, from the end of June onwards. Amongst ash trees at Amik (W).

Eumenis pisidice Klug (Led). Not taken by us. There are specimens from Aleih in the A.U. collection, taken by Professor Day. According to him, it occurs rarely at heights of 1000–3000 ft.

Eumenis actaea Esp. subsp. (?) *podarce* O. (Led, N, Z). Occurs on all the higher mountains from about 5000 ft. upwards, but is less common there than *E. pelopea* Klug and rather more local. Flies from the middle of June right through July. Bsherre Cedars (E, W, Z), Kanisa (E), etc. Also from Bludan in the Anti-Lebanon (W).

I follow Zerny in calling the race subsp. *podarce* O., though that is described from Portugal. Certainly the Lebanon form is not *hadjina* subsp.

Pararge aegeria L. subsp. A fine race, apparently nearest to subsp. *italica* Ver. Locally common in the valleys near the sea-coast, and in wooded country at middle heights, *e.g.* at Shweir (W), and Brummana (E). Has a succession of broods throughout the year, at intervals of about two months.

Pararge roxelana Cr. Extremely local. Not taken by us. Miss E. Smith found it commonly at Hasroun in August and kindly gave me a short series. Also known from Bludan (A.U. coll. and N).

Pararge maera L. subsp. *orientalis* Stgr. (Led, N, G, Z). Quite common on rough ground from the sea-level to the highest peaks.

Pararge megaera L. subsp. *lyssa* Boisd. (Led, N, G, Z). With *P. maera* L., but not nearly so plentiful.

Maniola telmessia Zell. (Led, N, G, Z). Very common on the coast and at middle heights, going up to 5000 ft. Appears at low elevations by the end of April, but is commoner in May and June. A second brood flies near the coast in September.

Maniola lycaon Rott. subsp. *catictera* Tur. (? Led, G, Z). From about 2500 ft. (Aleih, E) up to a considerable height, widespread, but always very local, in June and July. It frequents more bushy ground than the following species.

Maniola lupinus Costa subsp. *libanotica* Stgr. (? N, G, Z). On the lower slopes of the central range (4000–7000 ft.) in late June and July, usually on bare stony ground, and always very local.

Elwes confused these last two species; perhaps Lederer also. I believe I have them separated correctly, but this difficult group needs to be fully worked out before one can be absolutely certain.

Coenonympha pamphilus L. subsp. *thyrsides* Stgr. (Led, N, G, Z). Curiously enough, this species does not seem to occur below about 2000 ft. At middle heights, and on the lower slopes of the central range, it is abundant and widespread throughout.

Charaxes jasius L. Not common, but widespread, chiefly at middle heights though occasionally on the coast. Beirut, 4.ix.34 (W); Arayah, vii. 1927 (E); Beit Meri, 21.iv.34 (W); Brummana, frequently seen (and occasionally captured) in August and September (E).

Limenitis rivularis Scop. (Led, N, G, Z). Frequent in the valleys near the coast, and in suitable wooded localities at middle heights (Shewir, Brummana, etc.). I once took a specimen half-way up the south side of Kanisa, in a stony gully—a most unexpected capture.

Hypolimnas misippus L. A very occasional immigrant, not taken by us. There is a specimen in the A.U. coll., taken near Beirut, probably by Professor Day.

Junonia crebrene Trim. (Led.) Another rare immigrant. The only recent record is of two specimens caught by M. Henri Cremona just north of Beirut in June, shortly before the War. One of these is in the A.U. coll.

Vanessa atalanta L. (N, G, Z). Fairly common on the coast, at middle heights, and at Shtora in the Bekaa. One of the earliest species on the wing in January.

Vanessa cardui L. Abundant everywhere. In the summer heat it seems to be commoner in the hills than on the coast (W).

Aglais urticae L. subsp. *turcica* Stgr. (Led, N, G, Z). A very high mountaineer, occurring chiefly in the higher parts of the Cedar Mt. and Jabel Sannin (6000 ft. upwards) towards the end of June. A worn specimen which I took at Ehden (4500 ft.) may have been carried down by the wind. Larvae plentiful at Afka caves (W).

[*Nymphalis polychloros* L. (Led, N). The A.U. coll. has a series from Bludan. Mrs. Nicholl's are also from there, perhaps Lederer's also, though he gave no locality. Not certainly recorded from the Lebanon proper.]

Polygonia c-album L. Chiefly in wooded localities at a fair height (4000 ft. or more) in the northern Lebanon, Ehden, end of June (E), Bsherre Cedars, Hasrun, August (E). Larvae at Afka (W).

An attempt to breed both *A. urticae* and *P. c-album* on nettle at Beirut from larvae found at Afka was unsuccessful (W).

Polygonia egea Cr. (Led, N, G, Z). Common at all heights in suitable places. A very dark summer form occurs in the mountains, and I have more than once mistaken it for *P. c-album* L. on the wing.

Melitaea cinxia L. subsp. *clarissa* Stgr. (N, Z). Locally in the mountains from 4000 ft. to about 7000 ft. Bsherre Cedars (W), Afka (W), round Bwarij (E, W). The first *Melitaea* to appear at that height, beginning to emerge about the end of April.

Melitaea phoebe Knoch subsp. *telona* Fruhst. (Led, N, G, Z). Frequent in suitable localities at all heights, but rather local. Flies in April at the coast, nearly May at Bwarij.

Melitaea collina Led. Described from Antioch, and long considered a form of *M. phoebe* Knoch or *M. trivia* Schiff., from both of which it is absolutely distinct. I found it first above Bwarij in May 1930, and took a short series there the following year. I also took it at Luize in April 1931.

Melitaea trivia Schiff. subsp. *syriaca* Rebel. (Led, N, G, Z). Abundant at all heights, in fact the commonest Lebanese species of *Melitaea*. ♀♀, especially

of the first brood, are often bafflingly similar to the next two species. April (coast), and May (mountains), June (coast) to August (mountains), and a third brood on the coast in September.

Melitaea didyma O. subsp. *libanotica* Belter (det. Belter) (Led, N, G, Z). Occurs chiefly from 4000 ft. upwards (Shweir, Bwarij, Bsherre Cedars, etc.), the first brood in May and June. I have taken or seen occasional specimens at Brummana and Shemlan (*c.* 2500 ft.).

Melitaea saxatilis Chr. subsp. *montium* Belter (det. Belter). One of the types was taken by me at Bwarij in May, and I have others from the same locality. It seems to occur along with *M. didyma* O. in many localities, and to go up to the highest mountains. Unfortunately it was not recognised as distinct until after I had left the Lebanon, so that I have not specially investigated its distribution.

Melitaea deserticola Ob. subsp. *macromaculata* Belter. The type locality is near Bsherre, but the species occurs principally in the valleys near the coast. Even there it is very local. I have taken it mostly plentifully on the north side of the Nahr Ibrahim valley, but also at Nahr ul Kelb and Nahr Dammur, and once in the hills at Deir el Qamar. At Nahr Ibrahim the first brood flies at the end of March, the second in late May and early June. The Deir el Qamar specimen was taken in April. The Bsherre records, presumably of the first brood, were in June.

Issoria lathonia L. (N, G, Z). A small, pale, mountain form occurs throughout the range from about 3000 ft. We have taken it as early as April 10th, and as late as October, but it is most plentiful in May and June.

Argynnis niobe L. subsp. *philistra* Seitz (N, G, Z). Very local, but plentiful where it occurs, on damp ground at 3000–6000 ft. Near Ain Zahalta (E), north side of Kanisa (E), Bsherre (Z), above Amik (W), Bwarij (W), in late May and early June.

Argynnis pandora Schiff. (Led, N, G, Z). Widespread in the mountains, not usually below 4000 ft. Hasroun, common in August (E), Bsherre Cedars, Sannin, Bwarij (E, W), Ain Sofar (W), Shweir (W), Ain Zahalta in June (E). Occurs also at a rather lower elevation in the Bekaa, and at Bludan in the Anti-Lebanon (W).

Strymon spini Schiff. subsp. *melantho* Klug (Led, N, G, Z). Common locally in bushy ground from the coast (Dog River, etc.) up to middle heights (Aleih, etc.) and the fringes of the central range (Schweir, Afka, etc.). Also in the Bekaa (Baalbek, Amik, W.). End of May to early July.

Strymon ilicis Esp. subsp. *prinoptas* Zerny (Led, N. G, Z). Generally occurs at the same time and place as the last species.

Nordmannia abdominalis Gerh. (N, Z). Extremely local, chiefly on the eastern side of the range, at about 4000 ft. Bwarij (E), Kaa-er-Rime gorge, above Zahle (E). Also in the Anti-Lebanon (W). Second half of May and early June.

Nordmannia myrtale Klug (G, Z). Abundant in June in all the higher mountains, not below 5000 ft. in our experience. Cedar Mt., Sannin, Kanisa, Jebel Zahalta, etc.

Callophrys rubi L. subsp. *intermedia* Tutt (N, Z). Only recorded from the Bsherre Cedars, where it was taken by Herr F. Wichgraf in 1930. Common there at the end of May (W).

Thecla quercus L. Bsherre (Z).

Apharitis acamas Klug (Led, N, G, Z). Very local, but common where it occurs, from the coast up to about 5000 ft. Beirut (E), Nahr Ibraham (W),

shower E. N.E. and Lundy E. to E.S.E. appears towards the end of May on the coast, in July and August at Shoeir and Ain Zaisan.

Sterna cantiaca, Gm. Sandwich Tern. Occurs rarely in the vicinity of Tabarka in summer, as I was informed by the natives, but I never saw it myself. Not uncommon at Bona in autumn. Two specimens in Tenniswood's collection were shot in May and June. In each case the sex was not recorded.

Sterna hirundo, Linn. Common Tern. Very common in Tunis Lake, N. Lagoon at Bizerta and Lake Ashkel. Arrives in considerable numbers in the Bay of Tunis in May and August. Seen on the Lake of Bona, Algeria, in May. Specimens in Tenniswood's collection, shot in Tunis Lake, Bizerta Lagoon, and Lake Ashkel. Arrives in Algeria in May. Specimens in the Tenniswood collection were shot in Tunis Lake and Bizerta Lagoon. Not common on the Algerian coast, but I found them breeding in small numbers on the islands off Bona in May. Specimens in the Tenniswood collection were shot on the islands off Bona.

Sterna minuta, Linn. Lesser Tern. Common in Tunis Lake, N. Lagoon at Bizerta, and on the Algerian coast. Arrives in Algeria in May. Specimens in the Tenniswood collection were shot in Tunis Lake, Bizerta Lagoon, and Lake Ashkel.

Sterna leucoptera, Temm. White-winged Black Tern. Not uncommon on the Algerian coast. Specimens in Tenniswood's collection were shot in the Lagoon at Bizerta, and in the Seybouse, a river which runs into the sea at Bona. A passage-migrant, as Mr. Tenniswood's specimens were taken in May.

Hydrochelidon nigra, Linn. Black Tern. Common in Tunis Lake, N. Lagoon at Bizerta, and Lake Ashkel. Arrives in Algeria in May. Specimens in the Tenniswood collection were shot in Tunis Lake, Bizerta Lagoon, and Lake Ashkel.

Larus melanocephalus, Temm. Mediterranean Black-headed Gull. Not uncommon near the coast, but rarely seen inland. Specimens in Tenniswood's collection were shot in Tunis Lake, N. Lagoon at Bizerta, and in the Seybouse, a river which runs into the sea at Bona. A resident, but Mr. Tenniswood's specimens were taken in May.

Larus ridibundus, Linn. Black-headed Gull. Common near the coast, but rarely seen inland. Specimens in Tenniswood's collection were shot in Tunis Lake, N. Lagoon at Bizerta, and in the Seybouse, a river which runs into the sea at Bona. A resident, but Mr. Tenniswood's specimens were taken in May.

Larus fuscus, Linn. Lesser Black-backed Gull. Not uncommon near the coast, but rarely seen inland. Specimens in Tenniswood's collection were shot in Tunis Lake, N. Lagoon at Bizerta, and in the Seybouse, a river which runs into the sea at Bona. A resident, but Mr. Tenniswood's specimens were taken in May.

Larus cachinnans, Pall. Yellow-legged Gull. Common near the coast, but rarely seen inland. Specimens in Tenniswood's collection were shot in Tunis Lake, N. Lagoon at Bizerta, and in the Seybouse, a river which runs into the sea at Bona. A resident, but Mr. Tenniswood's specimens were taken in May.

Larus argentatus, Brünn. Herring Gull. Common near the coast, but rarely seen inland. Specimens in Tenniswood's collection were shot in Tunis Lake, N. Lagoon at Bizerta, and in the Seybouse, a river which runs into the sea at Bona. A resident, but Mr. Tenniswood's specimens were taken in May.

Larus audouinii, Payr. Audouin's Gull. Common near the coast, but rarely seen inland. Specimens in Tenniswood's collection were shot in Tunis Lake, N. Lagoon at Bizerta, and in the Seybouse, a river which runs into the sea at Bona. A resident, but Mr. Tenniswood's specimens were taken in May.

Larus genei, Brèhm. Slender-billed Gull. Common near the coast, but rarely seen inland. Specimens in Tenniswood's collection were shot in Tunis Lake, N. Lagoon at Bizerta, and in the Seybouse, a river which runs into the sea at Bona. A resident, but Mr. Tenniswood's specimens were taken in May.

Larus melanocephalus, Temm. Mediterranean Black-headed Gull. Not uncommon near the coast, but rarely seen inland. Specimens in Tenniswood's collection were shot in Tunis Lake, N. Lagoon at Bizerta, and in the Seybouse, a river which runs into the sea at Bona. A resident, but Mr. Tenniswood's specimens were taken in May.

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in June 1930. I searched the locality for it without success the following year, and W. failed to find it, so it seems to be rare and local in the Lebanon. Herr Schwingenschuss showed me a specimen he had taken near Bsherre village in June 1931. This is the only record from the mountains. Common at Jericho and in Iraq (W).

Chilades trochilus Frr. (N, G, Z). Common and widespread on rough stony ground on the coast and at middle heights. I found it especially common at Dlibta in June.

Zizeeria karsandra Moore (Led, G). Abundant near the coast, in June and again from August onwards, wherever *Trifolium alexandrinum* is grown. I have seen them in numbers in the streets of Ras Beirut.

Plebejus argyrognomon Bergst. (N, as *argus*). I have not seen Mrs. Nicholl's specimens, but assume that they are similar to mine, which certainly seem to be neither *P. argus* L. nor *P. ismenias* Meigen. Mrs. Nicholl records *P. argus* L. from the Bsherre Cedars and above Afka. I have two fresh ♂♂, taken at the Bsherre Cedars at the end of June, in 1930 and 1931. Zerny failed to find it, and queried Mrs. Nicholl's record in consequence. Perhaps we were both too early, and the first ten days of July are the right time for it.

Plebejus eurypilus Frr. subsp. *euaemon* Hemming (N, Z). South side of Kanisa, June 1927 (det. Hemming) (E). Bsherre Cedars, June (Z, E, W), August (W). Much less common than *P. sephyrus* Friv., and more local.

Plebejus sephyrus Friv. subsp. *nicholli* Elw. (Led, N, G, Z). Widespread and fairly common throughout the range from 4500 ft. Bsherre Cedars, Sannin, Kanisa, Jebel Zahalta. Also in the Anti-Lebanon (N, W), where the specimens are usually brighter and more strongly marked with orange. We have not sufficient material to be sure that the differences are constant.

Actizera panagaea H.-S. (N, G). Locally common in June above 6000 ft. right through the range, though Zerny seems to have missed it. Hadeth Cedars (W), Kanisa (E), high on Jebel Zahalta (E).

Turanana irkrama Moore subsp. *astabene* Hemming (= *clara* Christ.) (Led, Z). Never common. Single specimens may occur almost anywhere on rough bushy ground, from the coast up to 6000 ft. Nahr ul Kelb (E), Luize (E), ridge between Aleih and Suq el Gharb (E). First brood in April, second in July.

(*Scolitantides bavius* Ev. Recorded by Lederer without locality. Doubtful.)

Albulina ellisoni Pfeiffer (Z). Only known from the Cedar Mt., where it was first taken by Day about 1897. The food-plant, *Vicia canescens*, grows in masses above 7500 ft., and both sexes occur there in abundance at the end of June. Lower down, at the Bsherre Cedars, ♂♂ only are found, but in large numbers. The ♂♂ also occur, according to Zerny, along a valley below the Cedars as far down as Bsherre village.

The fact that Graves took a pair at 9000 ft. in August, whereas my first series (♂♂ only) was taken at 6000 ft. in June, led Hemming to assume incorrectly that the species had a graduated emergence at different heights. Actually ♂♂ may be found simultaneously at all heights, ♀♀ only very high up, so that one can only suppose the ♂♂ are carried down by the wind, taking shelter in the lee of the Cedar Grove or below it.

The abundance of *Vicia canescens* near the summit may be accounted for by the fact that, according to a shepherd whom W. met there, it is distasteful to goats.

Aricia chiron Rott. subsp. *mylitta* Hemming. Summit of Cedar Mt. 9000–10,000 ft., in early August. The types were taken there by me in 1930. It is abundant in its limited range, though less so than *A. isaurica* Stgr., which flies together with it.

Aricia agestis Schiff. subsp. *calida* Bell (Led, N, G, Z). I once considered this form to be a race of *A. cramera* Eschsch., but after comparing my series with specimens from the Atlas (where the two species, *A. agestis* and *A. cramera*, fly together), I have concluded that I was mistaken. It is generally distributed at all heights from the coast to the Anti-Lebanon in several broods.

Aricia isaurica Stgr. subsp. *dorsum-stellae* Graves (G). Apart from a possible record of Mrs. Nicholl's from the Anti-Lebanon, this is only known from near the summit of the Cedar Mt., 9000–10,000 ft., where it abounds in early August.

I have one remarkable aberration of the ♀, in which the white wedge-shaped markings, characteristic of this form, are extended to cover most of the underside of all wings.

Polyommatus loewii Zell. subsp. (Z). The race seems to me distinct both from subsp. *antilibanotica* Hemming (Baalbek) and from subsp. *lockharti* Hemming (Transjordan), but I have not enough material of these two races to make a full comparison at present. It differs totally from the North Syrian form (subsp. *germanicae* Pfeiffer).

Abundant throughout the range in June, from about 4500 ft. upwards. Bsherre Cedars, Sannin (very common on shoulder above Biskinta), Kanisa, Ain Zahalta.

Mrs. Nicholl only records *P. loewii* Zell. from the Anti-Lebanon.

Polyommatus candalus H.-S. subsp. *isauricoides* Graves (N, as "*isaurica*," G, Z). Another mountaineer, rare below 6000 ft. Not uncommon at the Bsherre Cedars, and on the shoulder of Sannin above Biskinta. Once taken high on Kanisa (E).

There is no possible doubt that Mrs. Nicholl's records of *A. isaurica* Stgr., and Grave's earlier records, really refer to subsp. *isauricoides*, whose upperside is totally unlike that of typical *candalus*. True *A. isaurica* Stgr. only occurs at a time when Mrs. Nicholl had left the country, and in a locality where she did not collect.

Polyommatus anteros Frr. subsp. (an sp.) *crassipuncta* Christ. (Led, N, F, G, Z). Miss Fountaine's record from "Bhamdoon (sic) Cedars" is presumably a slip for "Barouk." Bhamdun is quite outside the area both of the butterfly and of the tree. Subsp. *crassipuncta* was said by Mrs. Nicholl to have been plentiful on the north side of Kanisa, but we have never found it numerous, either there or elsewhere. It occurs, however, all over the lower slopes of the central range in late May and June, at 4500–6500 ft. Kanisa (E, W), Kartaba (W), Ain Zahalta, just below the Cedars (E), also from Bludan (W).

Polyommatus icarus Rott. subsp. *lucia* Culot. (Led, N, Z, G) and subsp. *juno* Hemming (G, Z). Subsp. *lucia* is a small to medium-sized, round-winged, rather heavily-spotted form, with usually two basal spots on the fore-wings. It occurs commonly everywhere, from the coast up to about 5000 ft., but is much rarer above that height. Subsp. *juno* is much larger in the ♂, pointed-winged, small-spotted, usually without basal spot, never with more than one. Its ♀ is usually richly suffused with blue right up to the costa of the fore-wings. It occurs from about 4000 ft. upwards, thus

occurring together with subsp. *lucia*. According to Hemming, there is no apparent difference in the genitalia.

I have taken the two forms together at Biskinta, Ain Zahalta, and elsewhere, and have never had any difficulty in separating them, but Graves informs me that he has had intermediate forms from Ain Zahalta. The question of their specific distinctions must therefore remain doubtful until it can be cleared up by study of the early stages.

As regards distribution, both are practically ubiquitous at the right height. Subsp. *lucia* is multiple-brooded, but only one brood of subsp. *juno* has been recorded, occurring in June and early July.

Polyommatus thersites Gerh. subsp. *gravesi* Chapm. (G. Z). Chiefly at 4000–7000 ft. in the northern Lebanon, at Ehden (E), Bsherre and the Cedars (E, W). Locally common in wooded localities in June.

Polyommatus amandus Schn. subsp. *anthea* Hemming and subsp. *brenda* Hemming (N, G, Z). Typical subsp. *anthea* occurs near Ain Zahalta (G, E, W) and on the lower slopes of Kanisa (G, W), at 4000–5000 ft. in early June. It is a round-winged, heavily-spotted form, whose ♀ is usually richly suffused with blue, except for a streak along the costa, and strongly banded with orange.

Subsp. *brenda* is described from the Cedar Mt., and has not been found elsewhere. Hemming gave the height incorrectly as above 8000 ft. Most of my specimens, including the holotype, came from the Cedar Grove, just over 6000 ft., where another form (referred to below) also occurs. Subsp. *brenda* has rather pointed wings, but the chief characteristic is the partial or complete disappearance of the markings on the underside, which makes it contrast very strongly with the heavily-marked subsp. *anthea*.

Zerny records a round-winged, heavily-spotted form with a blue ♀ from the Bsherre Cedars, and I should have taken this to be identical with subsp. *anthea*, had I not seen a series, mostly ♀♀, taken by Wiltshire at the Cedars in June and July, which seems to be intermediate. I have one similar ♀ in my collection, from the same locality. On the upperside they resemble rather poorly-marked subsp. *anthea*, but the underside markings are smaller, though still much more distinct than those of subsp. *brenda*.

I think it wiser not to give a name to this intermediate form for the present, in view of the fact that search in other localities at various heights might well produce a complete range of intermediates between subsp. *anthea* and subsp. *brenda*. The question is one which the next collector who visits the Bsherre neighbourhood would do well to study.

Polyommatus meleager Esp. subsp. *versicolor* Rühl-Heyne (det. Verity) (Led, G, Z). Abundant everywhere at 5000–7000 ft. in July and August. It has been said to occur at Suq el Gharb, but this is doubtless a mistake. I certainly spent a whole summer there without seeing it, and it is not the usual type of country for it at all.

The Lebanon race has usually been referred to subsp. *ignoratus* Stgr., but I understand from Herr Pfeiffer that Lebanon specimens differ from true subsp. *ignoratus* from the Taurus. Dr. Verity has recently informed me that two I sent him agree with subsp. *versicolor* Rühl-Heyne.

Lysandra coridon Poda subsp. *syriaca* Tutt (Led, N, F, all as "*bellargus*," G, Z). From 4000 ft., throughout the range, fairly common. Bsherre Cedars, Sannin, Kanisa (both east and south sides), Ain Zahalta. Late May (Kartaba, W) and June, again in July and August. Worn specimens of the

first brood occur in July, sometimes flying together with fresh ♂♂, presumably of a second brood.

Agrodiaetus ripartii Frr. subsp. *alcestis* Zerny (Led, N, G, Z). Throughout the range from 4000–7000 ft. It is local, liking the corners and edges of cornfields, but where it does occur it swarms in countless thousands. I have taken thirty with one sweep of the net. It flies from the end of June well into August.

Agrodiaetus poseidon Led. (N, Z). Abundant on the Cedar Mt. and Sannin from 6000 ft. upwards, chiefly in late July and August. I have two ♂♂ from the Bsherre Cedars, taken at the very end of June, and a female from near the summit (9000 ft.) at the same date. This last record is puzzling, and may be a different species, but I cannot distinguish the specimens from *A. poseidon* ♀♀ taken in August.

Glaucopsyche cyllarus Rott. subsp. *aeruginosa* Stgr. (N, G, Z). Locally common from the coast up to 6000 ft. (Bwarij, E, Bsherre Cedars, W). Late April to May, and in the mountains in June. I have specimens with six, five, four, three, and two spots on each fore-wing and two ♂♂ with no spots at all. The last seems to be ab. *subtus-impunctata* Ob., a name which could easily and advantageously have been shortened.

Cyaniris semiargus Rott. subsp. *antiochena* Led. (N, Z). Described from Antioch. In the Lebanon it is rare at middle heights (near Aleih, April–May, E), commoner from 4000–6500 ft., but always very local. Bsherre Cedars and Kartoba (W), Sannin (E), Bwarij (E, W), etc. The strong blue suffusion of the tiny ♀, and its heavy orange bands, make it a very remarkable race or species.

(*Maculinea arion* L. A German dealer is said to have received a series from Sannin, presumably taken by one of the Cremonas. There is an unset, or badly sprung, specimen in the A.U. coll., labelled "Cremona, Beirut." Unfortunately some obviously European specimens bear the same label. The occurrence of *M. arion* in the Lebanon therefore needs confirmation.)

Lycaenopsis argiolus L. subsp. *paraleuca* Rober (N, G). In suitable bushy places at all heights. On the coast it occurs from the end of January onwards.

Carcharodus alceae Esp. (Led, N, G, Z). Common on the coast and at all heights. Beirut, beginning of February; Schweir, Afka, Bsherre, etc.

Carcharodus orientalis Rev. subsp. *centralanatolicus* Pfeiffer (Led, as "*gemina*," N, as "*altheae*," G). Rare near the coast (Nahr Ibrahim, W), commoner at middle heights (Shweir, W), and on the flanks of the central range (Bsherre, W; Bwarij, E, etc.). Flies in May and June.

Carcharodus boeticus Ramb. (Led, G). In similar localities to *C. orientalis* Rev., but much less common. Bsherre Cedars, Bwarij.

Carcharodus (?) *ramses* Rev. Two specimens taken by Wiltshire at the Bsherre Cedars on 5.viii.34 seem very close to Egyptian *C. ramses* in the British Museum collection. The genitalia have not yet been examined.

(*Carcharodus tauricus* Rev. (Z). I have not seen Zerny's specimen so cannot say whether it differs from those I have provisionally referred to *C. ramses* Rev. Certainly at least one species differing from *C. boeticus* Ramb. occurs in small numbers near the Bsherre Cedars, but the point needs clearing up in the light of fresh material.)

Spialia orbifer Hübn. subsp. *hilaris* Stgr. (Led, N, G, Z). Abundant and widespread from the coast up, but less common in the mountains. April (coast) to June, again in August. The second brood is smaller and less strongly spotted.

[*Spialia phlomidis* H.-S. A pair from Bludan, 22.vii.34 in coll. Wiltshire. Both are much smaller than any *S. phlomidis* in the British Museum, and, when more material is available, this Anti-Lebanon form may prove to be a distinct race.]

[*Spialia poggei* Led. (N, F, G). Anti-Lebanon only.]

Spialia proto Esp. subsp. A form similar to that found by Pfeiffer at Marash occurs throughout the range at 4500–6500 ft. at the end of August. Bsherre Cedars (E), Sannin (fairly common on shoulder above Biskinta, E), Bwarij (W), Ain Zahalta (E.).

The form seems to be close to subsp. *lycaonius* Wagner, but I cannot say if it is identical with it.

Spialia sp. nr. *proto* Esp. One ♀ from Aleih, August 1939 (E). A male from Shweir, 11.ix.33 (W). A similar specimen, labelled "Lakluk" (not far from Kartaba) is in the A.U. coll. Evans examined the genitalia of a ♂ from "Syria," apparently of the same form, in the British Museum collection, and found it to be distinct from *S. protos* Esp. An exact identification must wait until the whole group has been more fully worked out.

Spialia nomas Led. (Led, N, Z). Occurs throughout the range, up to 6500 ft., in May and June; but we have not found it to be common. Bsherre Cedars (E), Bwarij (E), Amik (W). Also from Baalbek (W). Lederer's record is from the Dog River.

Pyrgus melotis Dup. (Led, N, G, Z). Quite common and widespread at all heights in April and May. Also in Anti-Lebanon (Bludan, June 1st, W).

Pyrgus armoricanus Rev. subsp. *philonides* Hemming (N, as *alveus*, Z). Described from the east side of the Lebanon above Shtora, where I have also found it. Not taken by W. Occurs, not very commonly, right through the range above 4000 ft. in May and June.

Pyrgus serratulae Ramb. subsp. *alveoides* Stgr. (N, Z). Agrees in date and distribution with *P. armoricanus* Rev., but seems to be considerably commoner. Kartaba (W), Bsherre Cedars (E, W, Z), Bwarij (E), etc.

The best characteristic for distinguishing subsp. *philonides* Hemming and subsp. *alveoides* Stgr. is the shape of the white spot near the middle of the costa on the underside of the hind-wing. In *alveoides* the spot is egg-shaped; in *philonides* it is roughly rectangular. I have to thank Mr. Hemming for enabling me to distinguish them by pointing this out.

Pyrgus foulquieri Rev. (Z). Zerny records one ♀ from the Bsherre Cedars. This is the only record from the Lebanon proper, but Wiltshire took a ♂ at Bludan in June 1934.

Erynnis marloyi Boisd. (Led, G, Z). Widespread on rough ground on the lower slopes of the central range (4000–6000 ft.) in May and June, but never common in the Lebanon in our experience. It is very difficult to catch, and easily worn, fresh specimens are hard to come by. Kartaba (W), Hammana (W), Bwarij (E, W), north side of Kanisa (E), south ditto (E), Biskinta (a superb specimen, taken by my wife), Ain Zahalta (noted by Graves). Common at Bludan (W).

Adopoea sylvestris Poda subsp. *syriaca* Tutt (Led, N, G, Z). Abundant and widespread on the lower slopes of the central range in June and early July.

Adopoea lineola O. subsp. *melinus* Zerny (N, Z). In similar localities to *A. sylvestris* Poda, but more local, and usually a few hundred feet higher up. Not taken by W.

Adopoea hyrax Led. Described from Antioch. Very local, coast to 5000 ft.

Nahr Ibrahim, end of May (E, W), Shweir, June–July (W), Dahr el Baida pass, June (4).

Adopoea acteon Rott. subsp. *phoenix* Graves (Led, N, G, Z). Very local, but widespread, occurring from the coast up to 6000 ft. at least. I was years without finding it, then took it commonly at Asfuriyeh at the end of May. Bsherre (Z), Amik, June 1st (W). Usually flies in or around cornfields, and is common where it occurs.

Ochlodes venatus Brem.-Grey (= *Augiades sylvanus* auct.) (G). Rare in the Lebanon, recorded mostly in single specimens. Hammana (Cremona, *teste* Graves), Shweir (E, W), Ain Zahalta (Graves, a pair).

Hesperia comma L. subsp. *pallida* Stgr. (Led, N, G, Z). Evans informs me that the genitalia agree with European *H. comma* rather than with *H. benuncas* Ob., which some authors have treated as synonymous with subsp. *pallida*.

Common everywhere in the mountains from about 4000 ft. in late July and August.

Gegenes nostrodamus F. (?Led, ?N, G). Early records (Led and N) may refer to *G. lefebvrii* Ramb., which is much the commoner species in my experience. But Graves 1913, *Ent. Rec.* **25** : 139) records both species from near Beirut, and I have one specimen of *G. nostrodamus* from the Dog River, taken in June.

Gegenes lefebvrii Ramb. (G). Not uncommon near the coast and at middle heights in June, and again in the autumn. Nahr Beirut (E), Nahr Maut (E), Junie (W), Shweir (W).

Chapra mathias F. (Led, as *thrax* F., N, G). Common in June and September at the Dog River, and elsewhere near the coast, but local, and not in the hills.

Baoris zelleri Led. (Led, G). In damp, shady places near the coast, but not common, in June. Nahr ul Kelb (E), Bahr Maut (E).

Part II.

Heterocera.

By E. P. Wiltshire.

I give, not only the species of Macrolepidoptera not taken by us but recorded in Zerny's list, but also Zerny's records of species taken also by us, where these records supplement our own records of season and distribution.

Sphingidae.

Sphinx pinastri L. Bsherre Cedars, July (W), Aug. (E); its southernmost limit.

Sphinx convolvuli L. Zy. I have also seen an example taken in the Bekaa by Mr. Najjar.

Smerinthus kindermanni Led. Bekaa, May (W), Bsherre, early June (Zy). Extends into Kurdistan, and down the Euphrates valley as far as Basra.

Marumba quercus Schiff. Middle heights, July and Aug. It may be double brooded, as it undoubtedly is in Kurdistan, but we have no direct evidence of this, not having worked Shweir and Brummana as residents in May. Against this possibility must be set the fact that July and August examples resemble more the examples I have taken in Kurdistan in late May than the more lightly marked ones taken there in September; that is, they have the appearance of a first, not a second, brood.

Deilephila nerii L. Common on the coast, but occurs also in the Bekaa.

Berutana kotschyi Koll. subsp. *syriaca* Led. Lederer's types were from the Dog River. We have taken it at many middle height localities and also at Ksara, in May and July–August.

Sphingonaepiopsis gorgon Esp., subsp. *pfeifferi* Zy. Bsherre Cedars, June (Zy), Aug. (E).

Macroglossum stellatarum L. Common everywhere.

Hemaris croatica Esp. Baalbek, and elsewhere in the Bekaa, late May, scarce (W).

Celerio euphorbiae L. Kartaba, Bsherre Cedars and the Bekaa, commonest in the latter (W). For the question whether the race deserves the name of subsp. *conspicua* R. & J. or a name at all, *vide* Pfeiffer's *Fauna von Marasch*, 1932, *Mitt. Münch. ent. Ges.* 22. Two large examples that came to light at the Bsherre Hotel were like *C. nicaea* Prun. in colouring, and I found that most of my bred examples inclined to a purpler colour and a smaller size.

Celerio nicaea Prun. The larvae may be got in the meadows of the Litane below Zahle and also in the Anti-Lebanon at Neba Barada. The moth flies in May and July–Aug. Zy. records it also from Bsherre and gives the race the name of subsp. *libanotica* Gehl.

Celerio lineata Fabr. subsp. *livornica* Esp. From Beirut to the Bekaa (W).

Hippotion celerio L. Seen in Beirut (E), middle heights and Bekaa (W).

Theretra alecto L. subsp. *cretica* Boisd. Beirut to Bekaa. The commonest Lebanese Hawkmoth, after *M. stellatarum* L.

Pergesa suellus Stgr. subsp. *rosea* Zy. Bsherre Cedars, May and early June (W).

Proserpinus proserpina Pallas. Bekaa, May : larvae mature in June (W).

ZYGAENIDAE.

Procris anatolica Nauf. (det. Nauf.). ♂♂, ♀♀ Beirut, 30.iv.33, Shweir, 7.vii. and 31.vii.33 (W).

Procris obscura Z. (det. Nauf.). ♀, Nahr Ibrahim, 26.v.34 (W).

These two species, and possibly others, must undoubtedly occur in E.'s material, which we have not been able to send to Naufock for determination. They both appear in Zerny's list.

Procris sp. no. 1. ♂♂, ♀♀, Nahr Ibrahim and Nahr Beirut, mid May, also in the grounds of the American University; Ain Zahalta, late May and early June (W).

The Beirut male has a bluer colour than the two mountain males; of this species Naufock wrote (5.ix.35) : " Infolge der stark schwarzen Hflgl. nicht zur *obscura* Z. zu stellen, obwohl die Ventralplatte der ♂♂ stimmt. Sie könnten eine Form der *obscura* sein, doch kommen mir die Vflgl. zu breit vor. Vielleicht sind sie *anceps* Stgr. Ich kenne leider diese nicht. *anceps* Stgr. soll aber stark glanzende Vflgl. haben."

Procris sp. ? no. 2, ♂, ♀♀, 30.iv.33, Beirut (W). Being unable to decide whether the month on the labels was 4 or 6, Naufock was uncertain whether the ♂ belonged to the ♀♀. I can assure him that all four were taken (together with *P. anatolica* Nauf.) on the same day at the same spot. Naufock wrote : " Die ♀♀ welche zu spitzfühlerigen ♂♂ gehören haben in der Regel Fühler welche nicht gegen ihr Ende starker werden. Die ♀♀ welche zu den ♂♂ mit verwachsenen Kammzahnen am Fühlerende (z.B. *statices*, *geryon*, *obscura*, etc.) gehoren, haben in der Regel Fühler die wie bei diesen 3 gegen ihr Ende starker werden. Der ♂ unterscheidet sich von *anatolica* durch die anders geformte Ventralplatte (Bauchplatte), die ähnlich wie bei

chloros Hb. gestaltet ist, also nicht wie bei *anatolica* in die Genitaloffnung vorgezogen ist. Auch sind die Vflgl. wie bei den 3 ♀♀ breiter als bei *anatolica*. Die ♀♀ sehen sehr den ♀♀ einer *statices*-Rasse ähnlich von welcher ich Stucke aus Ak-Chekir und Teschildere besitze. Sie könnten dorthin gehoren." Examination of the ♂ antenna shows that it can scarcely be classed as " spitzfühlerig," so I presume it does really belong to the 3 ♀♀!

Procris ampelophaga B.-B. Beirut and Beit Meri, all stages met with. (W) July. (Note: Lederer recorded from the Lebanon *Procris heydenreichi* H.-S. and *P. geryon* Hübn. In so difficult a group as this, and in default of access to Lederer's material, I think that these two records had best be here recorded with grave doubt.)

Zygaena graslini Led. Coast and middle heights, common; March and April. A race was described from Bsherre as subsp. *pfeifferi* Reiss., but we have not seen it and cannot say whether any of our material, which shows some variability, is referable to it.

Zygaena filipendulae L. subsp. *syriaca* Zy., Zy.

Zygaena cuvieri Boisd. subsp. *libani* Burgeff (1935). Bsherre Cedars (to light !), Kineseh, Dohr el Baida, July. Larva on *Ferulago frigida*, late May.

Zygaena carniolica Scop. subsp. *praestans* Oberth. Abounds at Bsherre Cedars, up to 9000 ft. (W); also at Hadeth Cedars (W), and Kineseh, above Hammana, (E) July, Aug.

Zygaena olivieri B. ? subsp. Bsherre Cedars, end June to Aug. (E). Not common. Two races have been described from the Lebanon, one of them from " Beirut " (! !). Both may be individual aberrations (E).

Zygaena corycia Stgr. subsp. *staudingeriana* Reiss. Bsherre (Zy).

Zygaena corycia Stgr. subsp. *wiltshirei* B.-Salz (Pl. 1, fig. 25). 16.vi.34, lower slopes of Jebel Kineseh, nr. Hammana, the holo- and allotype in cop. (W). Continental specimens of this unquestionably mountain-dwelling species labelled " Beirut " probably come from here, or near by. Described in *Ent. Rec.* **48,** Sept. 1936.

Dysauxes famula Frr. f. *quadripuncta* Stauder (det. Nauf.) (Led as *hyalina*). Shweir (W) and Brummana (E), early June and late August, the second brood being common to light, and flying nearly a month earlier than the second brood flies in Kurdistan at 5000 ft. high. One ♂, with completely windowless fore-wing was determined by Naufock as f. *ragusaria* Zick.

Syntomis mestralii Bugn. (1936). Around Kineseh, from Hammana to Shtorah, in late May; also above Zahle. Lederer records it as *S. kindermanni* (E). Early stages described in 1936, *Ent. Rec.* **48** (Suppl.).

Syntomis libanotica Bang-H. Described from Dlibta, above Zahle. Between Shweir and Biskinta, in June (E).

Arctiidae.

Nolinae.

Nola sp. (nec *squalida* Stgr.) ♀. 13.vi.34. Dog River (W.) (det. Warnecke). " Ein zu dieser Art gehörendes ♂ von Bagdad (leg. Wiltshire) hat Fühler mit Wimperpinseln (antennae penicillatae), die Type von *squalida* Kammzahne (antennae pectinatae) " (fide Warnecke).

Herr Warnecke believes that this is a new species, which he hopes to describe shortly.

Nola impura Mn. subsp. **wiltshirei** Warnecke subsp. n. "Diese neue Subspecies unterscheidet sich sehr erheblich von der grau und hellbraun gefärbten, unscharf gezeichneten Type der *impura*, welche mir zum Vergleichen vorgelegen hat. Ich habe aber keine Unterschiede in der Zeichnungsanlage, in der Fühlerbildung oder anderen Merkmalen finden können, und ziehe die 3 ♂♂ daher als subspecies zu *impura*. Diese neue Subspecies zeichnet sich durch die kräftige und gegen die graue, schwach lila getonte Grundfarbe deutlich abgesetzte *schwarzbraune* Färbung des Wurzelfeldes, des breiten, auch nach innen scharf begrenzten Mittelfeldes und des Aussenfeldes ab. In dem breiten hellen Raum zwischen Mittel- und Aussenfeld ist die bei *impura* nur als Schatten erkennbare dunkle schmale Linie, die der inneren Begrenzung des Aussenfeldes parallel läuft und sich unter dem Vorderrande zurückbiegt, als scharfe schwarzbraune Linie ausgeprägt." [G. Warnecke.]

Schweir, July (W), 2 badly damaged ♂♂; Beirut, 26.xi.34, 1 ♂.

Celama subchlamydula Stgr. subsp. *derasa* Zy. (det. Warnecke). Beirut, 14.v.33, (W), Bsherre (Zy).

Celama chlamydulalis Hübn. (det Warnecke). Brummana, July (E); also on the coast, March (W), Bsherre (Zy).

Roeselia togatulalis Hübn. (det. Warnecke). Brummana, Oct. (E), Shweir, July and Sept. (W), Bsherre (Zy).

Lithosiinae.

Paedia murina Hübn. Occurs at upper heights as a race smaller than European *P. murina*. Bsherre Cedars and Jebel Sannin, Aug.

Paedia albescens Stgr. (* 1935). Usually larger than *P. murina* Hübn., always whiter, and with the differences in pattern described by Osthelder and Pfeiffer in 1932, *Mitt. Münch. ent. Ges.* **22**. We follow their recognition of these forms as two good species, although Mr. Tams has examined the genitalia and can find no structural difference; and although larvae found at Bsherre Cedars and at middle heights and coast (W) differed in size, but not in colour or pattern. In Seitz, **2** (which follows Hoffmann) *P. murina* larvae are described as having yellow dots. The Lebanese larvae have white dots. The last word on this difficult group has not yet been said. *P. albescens* in the Lebanon is common on the coast and at middle heights from the end of June to October. Zerny took it at Bsherre, but not at Bsherre Cedars, 1500 ft. higher.

Lithosia muscula Stgr. Middle heights and coast, June to Oct., coming to sugar in July at Brummana (E), and to light there and elsewhere.

Macrosia wiltshirei Tams sp. n. (Pl. 1, fig. 1).

♂. Antenna ivory yellow, palpus pale orange yellow, head pale orange yellow to light orange yellow. Thorax and abdomen, dorsally and ventrally, ivory yellow, patagium and tegula shaded with pale orange yellow, as well as the abdomen laterally. Legs ivory yellow, the fore tibia and tarsus anteriorly. The mid tarsus, and the distal fourth of the hind tarsus, lightly infuscate. Fore-wing ivory yellow, the costa narrowly suffused with pale orange yellow. Hind-wing pale orange yellow, the proximal four-fifths of the anterior half lightly infuscate. Underside of both wings pale orange yellow, proximal four-fifths of fore-wing and proximal four-fifths of anterior half of hind-wing, infuscate. Expanse: 32–34 mm.

Holotype ♂ and 2 paratype ♂♂: Bsherre, 4.viii. 34 (*E. P. Wiltshire*).

Vein R1 is not free in this species as it is in the genotype, *M. fumeola* Walker.

Mr. Wiltshire has generously presented the type of this new species, together with several specimens of other interesting species from the material forming the basis of his list, to the British Museum (Natural History). [W. H. T. Tams.]

Arctiinae.

Utetheisa pulchella L. Coast, Oct. (W).

Ocnogyna loewi Z. (Led as *clathratus*). Distributed the length and breadth of Syria, from the coast well up to 5000 ft., but showing local races in the larval stage. After a few more seasons of breeding this species in Iraq, I may be in a position to publish some notes on this latter feature.

Diaphora mendica Clerck subsp. *syra* Dan., Zy.

Chelis mannerheimi Dup. subsp. *schwingenschussi* Dan., Zy.

Euprepia oertzeni Led. (* 1935). Coast and middle heights, Sept.–Oct.

Arctia villica L. f. *fulminans* Stgr. Ehden (E) and Shtorah (W), May and June. Zy records it as common at Bsherre. Also at Bludan (W).

Hypsinae.

Callimorpha quadripunctaria Poda. Middle heights, common through the summer. Bsherre Cedars (W). Most of the Lebanese examples are referable to var. *fulgida* Ob., but it is not a good subspecies.

Lymantriidae.

Orgyia dubia Tausch. subsp. *turcica* Led. Bsherre Cedars, Aug. (E). Larvae on *Astragalus cedreti*, up to 9000 ft. (W).

Lymantria dispar L. June to Aug. at middle heights, common. The larva feeds on oak (W).

Lymantria lapidicola H.-S. (Led as *atlantica*). Coast, middle heights, and Bekaa. Appears in May in the hills, and chiefly in Sept. on the coast. The larva hibernates, feeding on apricot, plum, almond, etc. (W). Is distinguished from the next species by its red abdomen and not by the hind-wing band which in both species varies in intensity and width.

Lymantria destituta Stgr. One ♀ only, Brummana, 25.ix.31 (E). Exactly resembles examples I have taken in Kurdistan (Amadia and Rowanduz), where *L. destituta* is far commoner than *L. lapidicola* H.-S., which in the Rowanduz area is represented by the small, obscure race subsp. *mardina* Stgr.

Ocneria terebinthi Freyer. Not uncommon at Brummana in July and Aug. (E); ♀♀ are more frequent than ♂♂ at light. This is also true of *O. rubea* Fabr. (E).

Ocnerogyia samarita Stgr. One, Brummana, July (E).

Ocnerogyia nora Stgr. One, Suq el Gharb, July (E).

Thaumetopoeidae.

Thaumetopoea wilkinsoni Tams. (Pl. 1, fig. 24). (Led as *pityocampa* F.). At middle heights, wherever *Pinus halepensis* grows, extending as far north as Alexandretta (W); this race agrees in its pale colouring with typical examples from Cyprus.

The larvae are indistinguishable (to my eyes) from larvae of *T. pityocampa* Schiff. which I took in Feb. at Marseilles, and do not as a rule feed

on the introduced Italian "stone-pine" which is so common in the Lebanon.

Tams separated *T. wilkinsoni* from *T. pityocampa* by the shape of the anal scales of the ♀, a character of some value in this group.

At Bsherre Cedars a darker, smoky-grey form occurs, which Tams is unable to separate specifically from the paler form of lower down. These two forms make an interesting parallel to the two Lebanese *Paedia* (*vide supra*). Pl. 1, fig. 24, shows the darker form of *T. pityocampa* from the upper heights. Three examples only were taken of this form in August (W).

Thaumetopoea solitaria Freyer. Common at Shweir, Sept. (W).

Lasiocampidae.

Libanopacha schwingenschussi Zy., Zy. I have found the larvae always together with those of *Orgyia dubia turcica* Led. (*vide supra*).

Eriogaster philippsi Bartel. Suq el Gharb, autumn (E).

Lasiocampa grandis Rog. Coast and middle heights, autumn, ab. *sapiens* Stgr. appearing regularly but less commonly. The larva feeds at night in spring on *Polygonum*, *Crataegus*, *Calycotome*, poplar, ash, etc. Presumably Lederer meant this species in recording *L. cocles* Hb.

Lasiocampa terreni H.-S. (* 1935). Bsherre, Zy, coast, autumn (W). The larva suns itself by day, eats chiefly grass, and usually dies in captivity. At Beirut it inhabits both dunes and limestone cliffs.

Lasiocampa eversmanni Ev. Suq el Gharb, autumn, one ♂ (E).

Pachypasa otus Drury. Middle heights, late Aug. E & W only took ♀♀, but Zy took several ♂♂ at Bsherre. Larvae on oak.

Lemoniidae.

Lemonia ballioni Chr. ? subsp. *pontica* Stgr. (Pl. 1, fig. 26). Suq el Gharb, Oct. (E) Brummana, worn example, early Nov. (E). These three examples are smaller than typical *L. ballioni*, agree well with Staudinger's short Latin description of the subsp., and are coloured bright yellow. ♂♂. In Pl. 1, fig. 26, the hind-wing fascia are not sufficiently evident.

Drepanidae.

Drepana binaria Hfn. Middle heights. April and July (W). Sept.–Oct. (E).

Cilix glaucata Scop. subsp. *asiatica* Bang-H. Beirut, May to Oct., commonest in autumn (W), Brummana, Hasrun, June–Aug. (E), Bsherre Cedars, Zy.

Saturniidae.

Saturnia pyri Schiff. Common on the coast, at middle heights, and as high as willow grows. Larvae often destructive in orchards. Flies in April and May.

Notodontidae.

Cerura syra Groum-G. (det. B.-S.). Widely distributed, from the coast to the Anti-Lebanon, the larva feeding on both poplar and willow; on the latter it occurs, by springs, with *Saturnia pyri* Schiff. at great heights.

Stauropus fagi L. Shweir (E), Brummana (E). Imago in September, presumably a second brood.

Hoplitis milhauseri F. Shweir, early July (W), Brummana, late Aug.–Sept. (E).

Spatalia argentina Schiff. Shweir, late June (W), Brummana, Sept. (E). From the little material we have, some, but not all, of the first brood seem to be more variegated in marking than the second brood.

Phalera bucephaloides Ochs. subsp. *syriaca* Zy. (* 1936). May to Sept. at middle heights. The larva is redder and holds its rear higher than that of *P. bucephala* L., under which name Lederer recorded this species. Early stages described in 1936, *Ent. Rec.* **48** (Suppl.).

Cossidae.

Cossus cossus L. Bsherre Cedars, June (Zy), and Aug. (W), and in the Bekaa (W). Lederer also records it.

Cossulinus argentatus Stgr. Bsherre Cedars, July (W).

Phragmatoecia albida Ersch. subsp. *territa* Stgr. Zy.

Phragmacossia libani Dan. Bsherre, July–Sept. (Zy); Brummana, Sept. (E).

Dyspessa ululа Borkh. subsp. *pallida* Roths. (det. B.-S.). Common at Shweir in late June. Zerny records "*ululа marmorata* Rbr. (?)" from Bsherre Cedars.

Dyspessa pallidata Stgr. (det. B.-S.). Flies together with *pallida* (W).

Zeuzera pyrina L. Common at light, coast and middle heights. In the Dammur valley, Judas trees are riddled by its galleries, and in Beirut, old pomegranate trees (W).

Aegeriidae.

Aegeria azonos Led. Described from Dog River.

Aegeria pipiziformis Led. Described from Dog River. (Lederer also recorded *A. ichneumoniformis* F. and *A. uroceriformis* Tr. from Syria, but the types of these species, of course, come from elsewhere.)

Dipsosphecia palariformis Led. (det. le C.). Shweir, 29.vii.33 (W).

Chamaesphecia loewi Z. (det. le C.). 16.v.33, Nahr Beirut gorge (W).

Chamaesphecia annellata Z. ab. *ledereri* Bart., Zy.

Chamaesphecia triannuliformis Frey., Zy.

Psychidae.

Pachytelia vilosella O., Zy.

Amicta taurica Wehrli (det. B.-S.). Shtorah and Amik, one in May and many in Sept. (W); also single specimens from Arayah (Sept.) and Shweir (Aug.) (W).

Amicta lutea-armena Heyl. (det. B.-S.). One, to light, Shtorah, Sept.

Phalacropteryx bruandi Led. From sacks found on the coast in late winter, emergence followed in April (W). Also from Bsherre, Zy.

Apterona crenulella Brd., Zy.

Fumea libanotica Zy., Zy.

Agrotidae.

We are indebted to M. Charles Boursin, of the Muséum National d'Histoire Naturelle, Paris, for his investigations and determinations of our material in the family Agrotidae. He made a large number of microscopic preparations of the genitalia of doubtful species, and enabled this part of our list to carry authority such as we could not have given it relying only on our own labours.

Simyra dentinosa Freyer. Shtorah, to light, April. Larvae mature at Baalbek and in North Syria in May, at Bsherre Cedars in July (W).

Acronycta psi L. (det. Tams). Beirut: Feb.–May, and October (W). J (Brsn.). The examples examined by Tams were from Beirut. A series taken at Brummana in June, July and Sept. (E) consists of three typical examples resembling those investigated by Tams, and five examples whose hind-wings are completely suffused with pale brown.

At Amik Acronyctid larvae were found on willow in late May (W), differing distinctly from British larvae of *A. psi*. Unfortunately no male imago from this locality is available for examination, so it is still uncertain if this larva represents a different species, or merely a race of *A. psi* with a different larval form; no larvae were found on the coast.

Acronycta rumicis L. From coast to Bekaa. T (Brsn.).

Acronycta taurica Stgr. (det. Brsn.). 21.viii.31, one ♀, Brummana (E).

Craniophora pontica Stgr. Shtorah, Aug. (W).

Bryophila divisa Esp. subsp. *oxybiensis* Mill. Bludan and Bsherre Cedars (W); Brummana (E); early June.

Bryophila petraea Guen., subsp. *contristans* Led. Brummana, mid-Sept.; one (E).

Bryophila labecula Led. Beirut, April (W); Nahr Ibrahim, one in June (E).

Bryophila ravula Hübn. (det. B.-S.). Shweir, end Aug.; Beirut, Oct. Bytinski-Salz wrote of this material: "Different forms, partly belonging to var. *rectilinea* Warr. One form a *grisescens* Oberth. Two f. *mediochracea* B.-Salz, TYPES." (*B. r. mediochracea* B.-Salz, 1936, *Ent. Rec.* **48**.)

Bryophila muralis Forst. Brummana and Shweir, July to Sept. More plentiful at the latter, and variable. One ab. *pallida* Tutt, one ab. *impar* Warr., the marginal line, however, being faint and grey, not clear and blackish like the Cambridge race. Also an example of ab. *amasina* Drdt. (det. B.-S.), undersized (W).

Bryophila marginelota Joan. (Pl. 1, fig. 23) (det. Brsn.). Common at Shweir in Aug.

Euxoa temera Hübn. Shweir, Bekaa, Sept., Oct. (W). Var. *hübneri* Brsn. is the prevailing form, but in a series of eight I have one var. *ruris* Hübn., one var. *villiersi* Guen., and one typical *temera* (W). Boursin doubted whether *hübneri* Brsn. deserves to be separated from var. *villiersi* by name.

Euxoa anarmodia Stgr. (det. Brsn.). Beirut, common to light, end Oct.; sands (W); teste Boursin this species is a true *Euxoa*, not an *Agrotis*, and should be placed here.

Euxoa distinguenda Led. Trans. ad ssp. *distincta* Stgr. (*perdistincta* Zy.), Zy.

Euxoa mendelis Fdz. subsp. *anatolica* Draudt (det. Boursin). Common to light at Talabaya in mid-October, varying from grey-brown to sandy-red. About one in ten only is reddish (W). Boursin adds: "Cette race est rapportée pour le moment à *mendelis* Fdz. mais il sera necessaire d'étudier la question sur un matérial plus considérable."

Euxoa aquilina Schiff. subsp. *obeliscata* Corti (det. Brsn.). Common at Shweir in Sept. Odd examples also taken at Bsherre Cedars in July and Oct., and at Beirut, in Oct. (W).

Euxoa conspicua Hübn. Single examples recorded from Bsherre Cedars by Zy. It is very common in May at Deir ez Zor on the Euphrates (W).

Euxoa hilaris Frr. ("possibly a distinct subsp." det. Brsn.). Bsherre Cedars, two ♂♂ (E). August.

Euxoa nigricans L. (det. Brsn.), ♂♀ 4.viii.34, Bsherre (W).

Euxoa heringi Stgr. **maronitica** Wiltshire subsp. n. (Pl. 1, fig. 8).

♂. *Head, thorax and abdomen*, rosy ochreous, the thorax being, in the more strongly marked specimens, sometimes slightly clouded with slate-grey on the shoulders.

Fore-wings : rosy, ochreous. Markings : as in typical *E. achyricola*, but sometimes obsolescent. The holotype is a strongly marked example : the space between the lightly defined fasciae is faintly dusted with grey, the orbicular and reniform stigmata remaining paler, of the ground colour; at the base of the latter, a dark grey spot, which even in faintly-marked specimens is visible, though fainter. Subterminal line, pale, of the ground colour, running through a heavy bluish-grey shade, which in the holotype is intersected, outside the line, by the veins which are of ground colour; in the paratypes, however, the veins are not so coloured, and do not break up the terminal shade. Terminal line, pale ochreous; fringes, rosy grey. *Hind-wing :* white, with an ochreous gloss, and a light greyish terminal band with no sharp proximal definition. Terminal line, grey; fringes, white, basally ochreous. Underside, glossy ochreous white; reniform stigma and post-medial fascia of fore-wing, sometimes indicated in ochreous grey. Veins, usually faintly marked in ochreous grey. Subterminal line of fore-wing similarly indicated in the holotype.

♀. Like the ♂ in markings and colouring.

♂ Holotype : 15.viii.31, Bsherre Cedars (*Ellison*) in Brit. Mus. (Pl. 1, fig. 8).
♀ Allotype : 15.viii.31, Bsherre Cedars (*Ellison*) in coll. Ellison.
Paratypes : ♂♀, 6.viii.34, Bsherre Cedars (*Wiltshire*) in coll. mea.

Common in August at the Bsherre Cedars. (See Draudt, 1938, *Ent. Rdsch.* **55 :** 155.)

Boursin wrote *in litt.* 22.vii.36 : " Vos *achyricola* Cti. que j'ai vus sont très rouges et mériteraient un nom de race," and he kindly sent me a typical *achyricola* (from Ak Shehir) which enabled me to make the above description [E. P. Wiltshire].

Euxoa denticulosa Esp. (= *cos* Hübn.) (det. Brsn.). Common at Shweir, Aug., Sept. (W). Zerny records the Bsherre race as a new subspecies (?) *rubra* Cti. The middle height examples hardly deserve a subspecific name, though some specimens incline to reddish coloration. Since the race *rubra* was described from one example and questioned by Corti, its right to a special name may now be doubted, though not rejected until a long series from the upper heights is forthcoming.

Agrotis flavina H.-S. subsp. *ochrina* Stgr. Common in the Bekaa, May and June (W). Dr. A. Stuebel took *flavina* in the Hauran (Cal.) and I have taken it as far east as Rowanduz in Iraqi Kurdistan. It is common in Anatolia (Turkey). In Syria it cannot be said to be " chiefly an inhabitant of derelict vineyards " as Corti *in* Seitz describes it.

Agrotis flavina H.-Sch. subsp. *xanthosemata* Hps. (*brunneopicta* Corti) (det. Brsn.). Described by Zerny as common at Bsherre Cedars. One example from Shtorah, where *flavina* is the prevailing form (W). The latter is pale yellowish, whereas *xanthosemata* is red-brown.

Zerny said " vielleicht eine gute Art," and the fact that it occurs together with the commoner form of *flavina* at Shtorah, but not at the Cedars, would seem to confirm this suspicion. Shtorah would then be the fringe of the range of mountain-dwelling *xanthosemata*, and I have observed that several of the species flying on the slopes of Jebel Kineseh occur less commonly in Shtorah, e.g. *Syntomis mestralii* Bugn., *Erynnis marloyi* Boisd., etc.

Agrotum segetum Schiff. Of general occurrence.

Agrotis ripae Hübn. subsp. *desertorum* B. (det. Brsn.). Beirut, on the sands, late Oct. (W).

Agrotis ypsilon L. Of general occurrence.

Agrotis trux Hübn. Brummana (E) and Shweir (W), August to October.

Agrotis crassa Treit. subsp. *golickei* Ersch. Middle heights and Dog River mouth, Sept., Oct.

Agrotis radius Haw. (= *puta* Hübn.). Generally common, in most months of the year.

Agrotis spinifera Hübn. From coast to Bekaa.

Agrotis exclamationis L. Ain Zahalta, Dohr el Baida, and Bsherre Cedars, June. Some examples have the black markings reduced, notably the thoracic "collar."

Agrotis (*Powellinia*) *lasserrei* Oberth. Brummana and Suq el Gharb, Oct. (E). The occurrence at middle heights of what is usually and rightly considered a desert species is remarkable. Its range extends westward through Egypt along the north African coast, and eastward through Iraq (where I have taken it at Bagdad) and into central Asia. An analogous case is its occurrence at Fez (Morocco) (E), and this would seem to indicate that it is a species that has successfully established itself in mountains, which are not truly desert in character, but adjoin real desert.

Agrotis (*Cladocerotis*) *wichgrafi* Corti (det. Brsn.). ♂♂ To light at Bsherre Cedars, in late October (W). Boursin wrote: "Ce groupe est actuellement difficile à étudier car on ne connait que peu d'exemplaires de ce que l'on croit être des espèces et qui ne sont peut-être en partie que des formes de la même espèce. . . . Je considère provisoirement vos exemplaires comme une race de *wichgrafi* mais qu'il est préférable de ne pas nommer pour le moment."

Agrotis (*Cladocerotis*) *tischendorffi* Püng. subsp. *libanotica* Corti (det. Brsn.). A number of ♀♀ to light, in November, at Talabaya. Boursin wrote: "Je ne considère *libanotica* Corti que comme une forme de *tischendorffi*."

[*Agrotis* (*Ogygia*) *signifera* F. (det. Brsn.). 1.vi.36, Bludan, one (W).]

Agrotis (*Ogygia*) *libanicola* Corti (det. Brsn.). Bsherre Cedars, common to light in June and July.

Agrotis (*Ogygia*) *forcipula* Schiff. subsp. *robustior* Corti (det. Brsn.). Bsherre Cedars, ♀, 9.vii.34 (W).

We have also an example taken by Schwingenschuss, and presumably one of the series named by Zerny "*forcipula obscurior*"; it seems to us the same as the above specimen, in determining which Boursin wrote (in April, 1935): "Dieses Tier sowie unsere (*i.e.* French) Form *nigrescens* Hofm. halte ich nicht für *forcipula* Formen sondern einer eigenen Art angehörend. Die Grösse ist immer breiter, die Grundfarbe dunkler und die Postmedianlinie viel gezackter als bei den typischen *forcipula*. In den franz. Seealpen, in St. Martin-Vésubie, namentlich, wo ich mehreren Jahren hindurch gesammelt habe, habe ich bemerkt, dass man dort in Juli die echte *forcipula* (eine hellere Form) von Mittel grösse beobachten und gleichzeitig zusammen auf demselben Flugplatz die grössere *nigrescens* mit ihren charakteristischen Zeichnungen fangen kann. Ausserdem habe ich kein Übergangsstück gefunden. Darum glaube ich an das Vorhandensein von zwei Arten." (See Seitz, *Macrolep. World*, Suppl. **3**: 245.)

Agrotis (*Ogygia*) *truculenta* Led. (*toxistigma* Hamps.) subsp. ? (Pl. 1, fig. 11). Bsherre Cedars, August, four being taken by E. and two by W. Since all these examples are strongly blackish-suffused, and have a decidedly

darker appearance than the Anatolian examples that are regarded as typical by most continental entomologists, I was strongly tempted to name the Lebanese examples after their first captor, Mr. Ellison, as a new race, since the type example (in the British Museum) has the colouring of the Anatolian (Ak Shehir) race. I have not done so, however, for the following reasons : the exact locality of the type is unknown, the specimen from which Hampson described the species being simply labelled " Syria," and there are no known paratypes. In default of a long series from the type locality, one cannot be sure that the dark form usual at Bsherre does not also occur there. My own feeling is that Hampson's type represents a race intermediate between the Anatolian and the Lebanese races, both of which deserve subspecific names, but of course more material is wanted to prove this, nor will the type-locality necessarily ever be known. The type, while having the paler coloration of the Ak Shehir race, has on the underside the postmedial fascia indicated in blackish, a character present in all six of our Lebanese examples but absent from my one Anatolian specimen. Teste Boursin, the genitalia of the Lebanese and Anatolian males are identical.

Agrotis (*Dichagyris*) *melanura* Koll. subsp. *roseotincta* Corti. Four beautiful examples from Bsherre Cedars in mid-Aug. (E).

Agrotis (*Dichagyris*) *squaliorum* Ev. subsp. *rubidior* Cti. (det. Brsn.). July, widespread, but not below 4000 ft.

Agrotis (*Dichagyris*) *terminicincta* Corti, Zy.

Agrotis (*Dichagyris*) *fimbriola* Esp. subsp. *zernyi* Corti (det. Brsn.). Bsherre Cedars, common in August.

Agrotis (*Dichagyris*) *laeta* Rebel (det. Brsn.). Bsherre Cedars, end June to mid-Aug.; common.

Agrotis (*Chersotis*) *multangula* Hübn. subsp. *subdissoluta* Wagn. Bsherre Cedars and Jebel Sannin, late June to August, never numerous.

Agrotis (*Chersotis*) *maraschi* Cti., Zy.

Rhyacia margaritacea Vill. Bsherre, near the Kadisha caves, one in late Oct. (W).

Rhyacia pontica Stgr. f. *consenescens* Stgr. (det. Brsn.). Two examples, from Shweir (W) (Sept.), show a slight tendency towards the redder, true *R. pontica*. Boursin wrote that *R. pontica* is a good species, very different from *R. depuncta*, especially in the genitalia, while *R. consenescens* is only a form of *R. pontica*.

Rhyacia flammatra Schiff. subsp. *centralasiae* Wagn. Swarms at Bsherre Cedars in May and June, and occurs also in August. J & T (Brsn.).

Rhyacia forficula Ev. Zerny records f. *erubescens* from Bsherre Cedars, together with the forms *turana* Stgr. and *intermedia* Stgr. My experience is that the Bsherre examples, though variable, are chiefly greyish ochreous forms, while the reddish *erubescens* flies with less variability but equal commonness in the Bekaa and Anti-Lebanon. Bludan, 1.vi.36 (W); Baalbek, late May. Bsherre Cedars, July.

Rhyacia obsoleta Corti (det. Brsn.). Bsherre Cedars, early June (W). Looks like a greyish *R. nyctymerina roseoflava* Cti, but appears earlier in the season.

Rhyacia simulans Hufn. subsp. *arenacea* Hamps. (= *pseudosimulans* Kozh. *fide* Brsn.). Bsherre Cedars, end May and early June (W). Boursin has also received this race from Djezzin, S. Lebanon.

Rhyacia nyctymerina Stgr. *roseoflava* Corti (det. Brsn.). Bsherre Cedars

in August; the largest of the yellowish Agrotids. The type is in Schwingenschuss's collection and was examined by Boursin. Unfortunately our five examples are all females.

In colour it resembles *Euxoa heringi maronitica* Wilts., with which it flies, but it is distinctly larger.

Rhyacia defessa Led. (det. Brsn.). One ♂, early Aug., Bsherre Cedars (W). Early in the summer (Z). Boursin wrote: "Ich habe die Genitalien untersucht und gewisse Unterschiede in den Valven mit *lucernea* gefunden sodass das Tier als gute Art angesehen werden kann."

Rhyacia saucia Hübn. Two, bred out in May from Beirut larvae (W), Bsherre (Zy).

Rhyacia elegans Ev. (det. Brsn.). One. mid-Aug., Bsherre Cedars (E). Boursin wrote: "Ce n'est pas la race *anatolica* Drdt. qui a les ailes inf. entièrement blanches."

Rhyacia candelisequa Esp., Zy.

Rhyacia leucogaster Corti, Zy.

Rhyacia iobaphes Brsn. (Holotype) (Pl. 1, fig. 6). To sugar at Shweir, 26.ix.33 (W). It recalls *R. glareosa* at first glance, but is most nearly allied to *R. rhomboidea*.

It seems to be a scarce species, for only one was seen, though the locality was worked fairly thoroughly in late Sept. and early Oct. in two successive years. It was described in 1936, *Bull. Soc. ent. Fr.* **1936**: 225.

Rhyacia xanthographa Schiff. Sept. and Oct. at middle heights. Some beautiful grey and red forms occur.

Rhyacia elutior Alph. typical form (red) and f. *pulverea* Hamps. grey form (det. Boursin). Brummana, ix.–x. (E).

Rhyacia palaestinensis Kalchb. (det. Boursin). One, Brummana, ix. (E).

Rhyacia castanea Esp. subsp. *neglecta* Hübn. (det. Brsn.). ♂ to sugar, Shweir, late Sept. (W). The same sugar-beat during the same week produced *temera hübneri, iobaphes, trux* and *Crymodes bischoffi*; *pontica* came about a week earlier, together with *obeliscata* Cti., *Catocala conjuncta, Sc. eriopoda, denticulosa* Esp., and *Polyphaenis subsericata*.

Orthosia senex Geyer. To sugar and cedar-bloom, end of Oct., Bsherre Cedars (W).

Epilecta linogrisea Schiff. One from Hasroun, mid-Aug. (E); fairly common at Shweir in late August and early September (W).

Triphaena pronuba L. Coast and middle heights, probably everywhere, but never as numerous as in England. Variable.

Triphaena orbona Hufn. Taken by us at middle heights, in July and October. It is a large race.

Triphaena ianthina Esp. One very bright specimen from Shweir in Aug. (W).

Actinotia hyperici Schiff. subsp. (or var.) *dilutior* Wagn. Middle heights and Bsherre. July and Aug.; J (Brsn.).

Blepharita trisignata Mén. (= *leuconota* H.-S.). Common on the coast, November to January; rather earlier inland (W). Also at Kyrenia, Cyprus.

Miselia cappa Hübn., J (Brsn.).

Miselia serena Schiff. 9.vii.31, Brummana, one (E).

Miselia spinaciae View. April, Aug. at all heights.

Harmodia lepida Esp. subsp. *capsophila* B. (= *carpophaga* Bkh.) (det. Brsn.). Bsherre Cedars, common in late May and early June. One ♂ from Shtorah, 9.iv.34 (W). T (Brsn.).

Harmodia compta Schiff. High altitudes only (E).

Harmodia luteago Schiff. Bsherre Cedars, one, in late June (E). Zy records the form *argillacea* Hübn. as the commoner here.

Epia mendica Stgr. (det. B.-S.). 12.v.34, Baalbek (W); J and T (Brsn.).

Epia mendax Stgr. One, at Arayah, in April (W).

Xylomania conspicillaris L. form. *melaleuca* View., Zy., T (Brsn.).

Monima rorida Friv. subsp. n., T (Brsn.).

Monima stabilis View. Larvae beaten from oak at middle heights in April (W).

Monima incerta Hufn. Larvae beaten from *Styrax* at middle heights in May (W).

Hyphilare lythargyria Esp. subsp. *grisea* Haw. End Aug. and Sept. Shweir (W).

Hyphilare loreyi Dup. Generally distributed from March on.

Hyphilare l-album L. Middle heights, June–July, Sept.–Oct.

Sideridis vitellina Hübn. ab. *pallida* Warr. Bekaa, Oct. (W), Brummana, Sept. (E). Two single specimens.

Sideridis putrescens Hübn. Coast and middle heights, autumn.

Sideridis herrichi H.-S. Two at Shweir, Sept. (W).

Cucullia boryphora F. de Waldh., J (Brsn.).

Cucullia wredowi Costa subsp. *judaeorum* Strand. Beirut, Nov. to May, especially common in Feb. Larva on *Anthemis* and *Calendula* at night, variable in colouring (W).

Cucullia verbasci L. At all heights. The larva is mature on the coast in April, at middle heights in May, and at Bsherre Cedars in June (W). We have not taken the imago of this and the following species wild; in fact of *C. verbasci* we have not even got an imago, since my pupae of this species failed to emerge.

Cucullia lychnitis Rambur (det. Brsn.). At all heights; Beirut, Tripoli, Shweir, Zahle. One coast pupa produced an imago in July the same year (W).

The hill race is more pallid than the coast race, and both are less warmly brown than the European *C. lychnitis*; but examples from the mountains are markedly white in the lower central part of the fore-wing even when fresh. This whitish coloration is characteristic of *C. barthae* Brsn. and *C. anceps* Stgr. and would seem to be this group's reaction to the Lebanese environment, analogous to the rosy tendency of other groups such as *Rhyacia*, *Elephina*, *Autophila*, etc. It would be interesting to see if the imago of *C. verbasci* L. also showed a whitish tendency here.

Cucullia anceps Stgr. Recorded from Bsherre, but taken by neither of us.

Cucullia barthae Brsn. (det. Brsn.). Almost as white as *C. anceps* Stgr., but distinguished by the broader dark suffusion of the ♂ hind-wings. Described in 1933, *Mitt. Münch. ent. Ges.* **23** : 10, plates I, III, and V. This species does not appear to occur below 3000 ft. It is the only one in the group to come to light commonly, which it does at Bsherre Cedars in May and early June. The larvae feed on *Scrophularia xanthoglossa* and have been found mature at Baalbek in May, at Kartaba and Aitou in early June, and at Bsherre Cedars in mid-July, J (Brsn.). The larva has black dorsal X's, but, according to Boursin to whom I sent living examples of it and who knows well *C. blattariae* Esp. larva, it differs from the latter both in markings and in having a different ground-colour.

Cleophana antirrhini Hübn. subsp. *asiatica* Ost., Zy.

Calophasia platyptera Esp. Bsherre Cedars, May and early June (W).

Calophasia casta Bkh. Bsherre Cedars, early June and August (W).

Derthisa lederi Christ. (det. Brsn.). ♀, 11.xi.34, Anjar (Bekaa) (W); an example with a greyish ground-colour, and an admixture of rosy brown.

♂. Another example, received from Brother Cremona, was bred out by him (on 18.x.33) from pupae dug up in the Jesuit vineyards at Ksara (Bekaa), and is very reddish with well-marked spots; according to Boursin it should be an extreme form of var. *discors* Stgr.

Boursin adds that *D. lederi* belongs to, or represents, a group of very difficult forms and species, the relations of which to each other have not yet been defined with sufficient certainty.

Dasypolia libanotica Drdt. (det. Brsn. and B.-S.). Bsherre Cedars, late October, one (W). Originally described from Zahle. Boursin and Draudt agree that this is probably only the local race of *D. templi* Thunb.

Aporophila nigra Haw. (det. B.-S.). Bsherre Cedars, end Oct.; Shtorah, Nov. (W). Not noted on coast. A large, brownish, light race.

Aporophila australis Boisd. subsp. *orientalis* H.-S. (det. Brsn.) (= *ingenua* Frey.). Beirut, November and December, but not noted higher than 800 ft.

Lithophane lapidea Hübn. subsp. *cupressivora* Stgr. Larvae at Beit Meri and Aitou on cypress, at Afka on juniper, mature in April and May (W).

Xylina vetusta Hübn. Shtorah, Nov. (W). A distinctly grey race.

Dichonia areola Esp. Beirut and Asfuriyeh, Dec. to March. Sometimes pure grey (ab. *mustapha?*); orbicular and reniform stigmata sometimes united.

Dryobota furva Esp. Middle heights, Nov. and Dec., noted down to 800 ft. Larvae mature in April (W).

Meganephria oxyacanthae L. subsp. *benedictina* Stgr. Middle heights, Dec. and Jan. Probably occurs on Syrian coast at suitable places. The Cyprus race (Kyrenia) is smaller and paler (W).

Eumichtis lichenea Hübn., J (Brsn.).

Eumichtis muscosa Stgr. (det. Brsn.). Middle heights, late summer and autumn.

Dryobotodes roboris Geyer. Middle heights, from Nov.; lasts till Jan. at 800 ft. Larvae mature in April (W). Rather variable and not referable to subsp. *taurica* Osth. (W).

Antitype serpentina Tr. Beirut, Shtorah (W); Suq el Gharb (E); November.

Antitype rufocincta Hübn. ab. *flavidior* Warr. (det. B.-S.). Throughout Syria at all heights. Abundant at Bsherre Cedars at end Oct.; at Shtorah in Nov.; and on coast and up to 2250 ft. till Jan. (W).

Antitype canescens Dup. Suq el Gharb, Oct. (E); Beirut, Nov. (W). Larva on asphodel at night, early spring (W).

Antitype jonis Led. subsp. Led. (det. Brsn.). Bsherre Cedars, end Oct. (W). The race probably deserves a name, but only three were taken (♂♂♀), and only one was in really good condition, a longer series would be necessary before making a description. The facies is nearer that of *A. suda* Geyr. than typical *A. jonis*, but the genitalia are almost identical with typical *A. jonis*, according to Boursin.

Antitype anceps Stgr. (det. Tams et B.-S.). November to February, common to sugar, rarely to light. Luize (W), and Beirut; also at Kyrenia, Cyprus (W). J (Brsn.).

Conistra vau-punctatum Esp. Bsherre Cedars, common at end of Oct. (W).

Conistra acutula Stgr. Shtorah, one, 22.xi.33 (W).

Spudea ruticella Esp. Luize, one, 9.xii.34 (W). The larva has been beaten elsewhere at lower middle heights in April from oak (W).

Amathes hypotaenia B.-Salz and form. *wiltshirei* B.-Salz. Paratypes (Pl. 1, figs. 2, 3). The description of the typical and of the black form appeared in 1936, *Ent. Rec.* **48**.

The series collected at sugar at lower middle heights in winter is all of the black form, except one; and within the black form the examples with the pale subterminal chain (fig. 2) predominate. The one exception (fig. 3) is presumably typical *A. hypotaenia* (we have not seen the Paris type). There can be little doubt that on the hills just behind Beirut var. *wiltshirei* represents the race, with typical *A. hypotaenia* occurring as an aberration. We have not taken this species actually in Beirut, though there seems no reason why it should not occur down to sea-level at suitable spots. Perhaps it used to occur on Ras Beirut in the past, before the town started spreading over this area, but the fact that the Paris type is labelled Beirut does not prove that it did, unless it is known that the collector of that example was more scrupulous in his locality labels than several pre-war collectors, whose vague practice is touched on in the introduction to this list. Boursin, *in litt.*, says that he thinks the type was taken near the coast north of Beirut, between Ghazir and Beirut (this is not the same as the coast-locality Ghadir to the south); and it is likely enough, for in the neighbourhood of the Dog River the limestone cliffs abut immediately on the sea, and I should expect to find this species in such localities.

Amathes lota L. Shtorah, Nov. (W). Unlike British *A. lota*, but typical, with the heavy middle shade.

Amathes litura L. Bsherre Cedars, late Oct. (W). Unlike the British var. *rufa* Tutt, but typical violet-grey.

Amathes helvola L. f. *pallescens* Warr. One, at Luize, early in Dec. (W).

Amathes lactiflora Drdt. (det. B.-S.). One ♂ to sugar, Bsherre Cedars, and Oct. Looks superficially like an undersized *palleago* Hübn. (W).

Amathes kindermanni F. R. subsp. *pauli* Stgr. (* 1935). Arayah and Luize, Dec. and early Jan. (W).

Amathes lychnidis F. Extremely common and variable in the hills, where it appears in November; less so on the coast, where it flies in January. In the hills, vars. *lychnidis* F., *pistacina* F., *rubetra* Esp., *serina* Esp., and *coerulescens* Calb.; on the Coast, var. *pallida* Tutt (W).

Amathes mansueta H.-S. (* 1935). On coast and at Luize, Dec. (W).

Amathes macilenta Hübn. subsp. **rubrescens** Wiltshire, subsp. n. (Pl. 1, fig. 10).

♂. *Head and thorax;* coloured like fore-wing.

Fore-wing: markings as in typical *A. macilenta* Hübn., but ground-colour reddish-brown, dusted with grey scales, most heavily so dusted outside the postmedial fascia. Orbicular and reniform stigmata, outlined in red brown. *Hind-wing:* blackish-grey, with postmedial fascia indicated in darker. Terminal line, pale ochreous. Fringes, rosy brown.

♀. The allotype is even redder than the holotype, being of a glossy chestnut red. Fore-wing, not so uniformly grey-dusted, but infused with greyish outside the postmedial fascia. Stigmata's outlines, very faint.

Holotype: ♂, 16.xii.34, Luize (W) in coll. mea.

Allotype: ♀, 25.xi.33, Shtorah (W) in coll. mea.

Paratypes: ♀♀, 9.viii.35, Arayah, and 27.x.34, Bsherre Cedars in coll. mea.

These two examples are more worn, and consequently paler.

Boursin after examining the two type examples wrote : " C'est une forme très rouge et plus décorée que le type. Au point de vue dessins, elle forme un peu l'intermédiaire entre lui et *blidaensis* Stertz, d'Alger." [E. P. Wiltshire.]

Atethmia xerampelina Esp. subsp. *maculifera* Stgr. Bekaa, Nov. (W). Larva matures in April (W). Suq el Gharb (E). Nov. A pale brown form appears as an aberration, the yellow being the usual.

Atethmia ambusta F. Shweir, Sept. (W). One example only, *not* referable to subsp. *syriaca* Osth. (W).

Cosmia ocellaris Borkh. f. *palleago* Hübn. and trans. ab. *palleago* Hübn. (det. B.-S.). Shtorah, Nov. (W).

Amphipyra pyramidea L. One, at Shweir, Sept. (W).

Amphipyra micans Led. End Aug. to Sept. middle heights.

Mania maura L. Shtorah and elsewhere in the Bekaa, Sept. to Nov. Larvae mature in April (W).

Parastichtis monoglypha Hufn. Shweir, July (W); Bsherre Cedars mid-August (E). We also have two brownish examples taken at Bsherre in June by Schwingenschuss. These are presumably as good as paratypes of subsp. *syriaca* Ostheld. recorded by Zerny from Bsherre Village and Cedars, but in the Lebanon it is not the only form that occurs (W). J (Brsn.).

Parastichtis anceps Schiff. (= *sordida* Borkh. det. Brsn.). Bsherre Cedars early June (W). A darker race than the British.

Parastichtis secalis L. Shweir, Sept. (W); Brummana, June to August (E).

Oligia literosa Haw. subsp. *subarcta* Stgr. (det. B.-S.). Bsherre Cedars, Aug.

Oligia bicoloria Vill. trans. ab. *pallidior* Stgr. (det. B.-S.). Dog River and Brummana (E), all early October.

Crymodes platinea Tr. subsp. (det. Brsn.). One ♀, Bsherre Cedars, Aug. (E).

Crymodes bischoffi H.-S. (= *Antitype apora* Stgr. ! *teste* Brsn.). (* 1935). Shweir, to sugar in Sept. (W).

Palluperina rubella Dup. (det. Brsn.). Suq el Gharb, Oct. one ♂ (E) Shweir, one ♀ to sugar, 3.x.34 (W).

Trigonophora meticulosa L. Beirut, March; Bsherre, end October (W).

Eriopus latreillei Dup. Aug., Shweir (W); Brummana, July (E), T (Brsn.).

Polyphaenis propinqua Stgr. (* 1935). Beirut, Shweir (W). Larva on honeysuckle in spring.

Polyphaenis subsericata H.-S. Common at middle heights, Sept. to Oct.; very variable.

Stilbina hypaenides Stgr. Beirut, Bekaa, Oct., Nov. (W).

Hypeuthina fulgurita Led. Beirut (W) and middle heights (E), common in autumn.

Praestilbia armeniaca Stgr. and ab. *designata* B.-Salz. Brummana and Aley, Oct. The specimen of ab. *designata* might (teste Boursin) be a good species, but there is only one ♀, so certainty is impossible (W). Described in 1936, *Ent. Rec.* **48**.

Amphidrina agrotina Stgr. subsp. *syriaca* Osth. (det. B.-S.). Middle heights, mostly in Sept.

Prodenia litura Fabr. Nov. to March on the coast.

Spodoptera latebrosa Led. (not *S. abyssinia* Guén.) (det. Brsn.). Neba Sannin, Aug. (W); Beirut, April (E), Brummana, July and Sept. (E).

Laphygma exigua Hübn. Of general occurrence, abundant on the coast.

Elaphria clavipalpis Scop. (det. Brsn.). Bsherre Cedars, May and early June (W).

Elaphria muricolor Brsn. (det. Brsn.). Beirut, Ghadir, April and October.

Elaphria hypostigma Brsn. Taken first at the same time as *H. pfeifferi* Brsn. (see below) and described with it. (1932, *Int. ent. Z., Guben.* **26** : 245.)

Elaphria amseli Brsn. (det. Brsn.). A good series, representing the second generation, from Brummana, in Oct. 1931 (E), includes paratypes; the species was first taken by Amsel at Jericho in early April 1930, and was described in 1936, *Bull. Soc. ent. Fr.* **41** : 225. One of the paratypes is now in the British Museum. J & T (Brsn.).

Elaphria ellisoni Brsn. 1 ♂, Bsherre Cedars, 15.viii.31 (E); 1 ♂, Bsherre (1900 m.) (Zerny), 12–19.vi.31. The latter is the example referred to in Zerny's Fauna as no. 185, " *Caradrina* sp."

Elaphria atriluna Gn. (= *mediterraneae* B.-B. = *distincta* Stgr.) (det. Brsn.). Beirut, April and October to November. Also at Haifa, Palestine, in May (W). This species and *A. muricolor* Brsn. are the two commonest of this genus on the Lebanon coast.

Elaphria aspersa Ramb. (det. Brsn.). July and Aug., Shweir : ♂ & ♀♀ (W).

Elaphria syriaca Stgr. (det. Brsn.). Brummana and Shweir, Sept.; in Oct. and Nov. at Suq el Gharb (E) and on the coast (W).

Elaphria kadeni Freyer (a distinct species teste Brsn.) (det. Brsn.). One ♀ from Talabaya, Bekaa, 28.x.34 (W). Boursin wrote : " Complètement distincte de *fuscicornis* Rbr., qui appartient au groupe de *clavipalpis* Scop."

Elaphria vicina Stgr. subsp. *rosea* Brsn. (Pl. 1, fig. 5). One ♂ (Type) at Jebel Sannin, 23.viii.33 (W). May be distinguished from *E. hedychroa* Brsn. at a glance by the blackish submarginal shading of the fore-wings and the dark border of the hind-wings. In his description in 1936, *Bull. Soc. ent. Fr.* **41** : 6, Boursin wrote : " Cette race se distingue de la forme typique de Sarepta par sa taille légèrement plus grande, mais surtout par la teinte rosée qui envahit les ailes supérieures, caractère que présentent beaucoup d'espèces dans le Liban. . . ."

A worn example, recorded by Zy from Bsherre as *syriaca* Stgr., is probably referable to this race, described later from a specimen in better condition (W).

Elaphria hedychroa Brsn. (Pl. 1, fig. 4.) This pretty species was described in the 1936, *Bull. Soc. ent. Fr.* **41** from three specimens taken by me at Bsherre Cedars and Jebel Sannin, in August. Other examples were later found in E's material from the Cedars, also taken in August.

One ♀ from Shweir (W) in late August is paler and less grey-clouded subterminally than the others.

This species mimics *Euxoa heringi maronitica* Wiltsh. perfectly, flies with it, and is easily confused with it.

Elaphria bodenheimeri Drdt. (det. Brsn.). Four were taken by E. at Brummana in early October. This is yet another of the Agrotids with the typically Lebanese rose-colour. It differs from *E. hedychroa* Brsn. in being rather smaller, more greyish suffused subterminally on the fore-wing, and in having two bright points at the base of the reniform stigma. The antennae, furthermore, have a longer fasciculation. The second brood of this species is regularly more numerous than the spring brood. Previous records of *E. flava* Ob. from the Lebanon probably refer to this species.

Hoplodrina ambigua Schiff. (det. Brsn.). Beirut, April; Shweir, Sept.; Bekaa, April (W).

Hoplodrina pfeifferi Brsn. Described from examples taken by Pfeiffer and Zerny at Bsherre in June 1931. In the *M. alsines* Brahm group.

Haemassia renalis Hübn. (det. Brsn.). Brummana and Shweir, Sept.

Scioptila eriopoda H.-S. (* 1935). Middle heights, Aug. to Sept.; on the coast, October. The larva feeds on various shrubs in winter and spring (W).

Hadjina viscosa Frr. (* 1935). Only noted on the coast in the winter months (W), but two examples from Suq el Gharb in July and October (E). Food-plant, *Inula viscosa* (W).

Enargia regina Stgr. Shweir, Sept. (W). Not ab. *deleta* Warr., but typical, and quite variable.

Phragmitiphila typhae Thnbg. One ab. *nervosa* Esp., at Amik marsh on July 1st (W).

Archanara sparganii Esp. subsp. Amik, early July. A rosy-pink-tinged race, smaller than British *A. sparganii* (W).

Archanara geminipuncta Haw. subsp. *wiltshirei* B.-Salz. and f. *brunnea* B.-Salz. (Pl. 1, fig. 7). (1936, *Ent. Rec.* **48**); Common at light at Amik marsh in early July, and ranging from blackish-brown (*brunnea*) to pale red-brown (*wiltshirei*), most examples lacking the white cellular dots (W).

After exhaustive structural comparisons of both sexes of this and European *A. geminipuncta* Haw. and of its congeners, Boursin concludes that subsp. *wiltshirei* B.-Salz is not specifically distinct; Tams after seeing his preparations and photographs is of the same opinion. The plate shows a typical ♀ of subsp. *wiltshirei* B.-Salz, if rather smaller than the majority of my series.

Oria musculosa Hübn. Asfuriyeh (May) and Amik (June) (W). Boursin has received an example from Djezzin in S. Lebanon.

Sesamia cretica Led. Beirut, March and April. Larvae mature in Jan., and Feb., in stems of *Saccharum egyptiacum* (W), T (Brsn.).

Megalodes prolixa Draudt, J (Brsn.).

Heliothis peltigera Schiff. Beirut, March to May. A dwarf from Shweir, July (W).

Heliothis nubigera H.-S. Beirut, March and April, its main emergence preceding that of *peltigera* (W).

Heliothis dipsacea L. subsp. Amik, May (W), J (Brsn.).

Heliothis armigera Hübn. (*obsoleta* F.). Beirut, June; Bekaa, Sept. (W), Beirut, July; Brummana, Sept. (E).

Charidea treitschkei Friv. subsp. *taurica* H.-S. Bsherre Cedars, Zy.

Leptosia velox Hübn. Beirut, May; commoner at Shweir in Aug. and Sept. (W).

Leptosia velocior Stgr. (det. Brsn.). Shweir and Brummana, Aug. and Sept.

Calymma communimacula Schiff. Bsherre Cedars; Aug. (W); Hasroun, Aug. (W).

Coccidiphaga scitula Ramb. Beirut, Oct. (W). Trans. to ab. *virginalis* (det. B.-S.).

Porphyrinia ostrina Hübn. Coast and middle heights.

Porphyrinia parva Hübn. Coast and middle heights, Aug. to Nov.

Porphyrinia cochylioides Guen. Brummana, late Oct. (E).

Porphyrinia chlorotica Led. Originally described from the Lebanon in 1857.

Porphyrinia polygramma Dup. Bsherre, and Bsherre Cedars (Zy); Luize (W).

Porphyrinia noctualis Hübn. Bsherre (Zy).

Porphyrinia albida Dup. Sannin and Brummana, July and Aug. (E); Bsherre (Zy). One var. *infuscata* Stgr. (det. B.-S.) from Shweir, late Sept. (W).
Porphyrinia suppura Stgr. (det. B.-S.). Shweir, Sept., one (W).
Porphyrinia lutosa Stgr. (det. B.-S.). Common in the Bekaa, June and July (W).
Porphyrinia straminea Stgr. Common in the Bekaa, June to Aug. (W) Jebel Kineseh.
Porphyrinia ragusana Frr., Zy.
Porphyrinia pallidula H.-Sch. subsp. *cypriaca* Stgr., Zy.
Eublemma deserta Stgr. (det. Brsn.). 23.viii.33, Sannin, one (W).
Ozarba lascivalis Led. Sannin, July, one (E).
Erastria trabealis Scop. Bekaa, July (W).
Tarache luctuosa Esp. Bsherre Cedars and Hasroun (E). Abundant in the Bekaa from April to Oct. (W).
Tarache lucida Hufn. Among the Beirut examples is one f. *albicollis* F. Dog River (E). March and April on coast, mid-June at Bsherre (Zy).
Eutelia adulatrix Hübn. (* 1935). Beirut, common, and middle heights, scarcer (W). May to October. Food-plant, terebinth.
Eutelia adoratrix Stgr. Beirut, together with *E. adulatrix* Hübn., but the commoner in the hills, though by no means abundant there.
Nycteola falsalis H.-Sch. Beirut, June (W).
Sarrothripus revayana Scop. Shweir, June, July (W). Brummana, July, Aug. and Oct. (E).
Earias insulana Boisd. From coast to Bekaa. Mauve-marked and yellow forms especially frequent in the autumn.
Earias syriacana Bart. (det. B.-S.). Shtorah, Dog River and Neba Sannin; probably everywhere with willow (W). Zerny records it from Bsherre, adding; " sonst nur von Beirut bekannt." For our opinion of old records of " Beirut," see our introduction. In this case the Dog River is probably the type locality (W).
Hylophilina bicolorana Fuessl. subsp. *conspersa* Warr. (det. B.-S.). Shweir, and Brummana, July and Aug.
Acontia malvae Esp. Beirut, June to Aug. (W). Oct. (E). Larvae mature in Oct. (W).
Catocala elocata Esp. Common, end July to Nov. middle heights and Bekaa.
Catocala puerpera Giorn. Shweir, Aug. and Sept., but commoner in the Bekaa (W).
Catocala nymphagoga Esp. 800 ft. to 5000 ft. A day-flier. End May on through summer. Larva on oak in April and May (W).
Catocala conversa Esp. Middle heights, June and July. A day-flier.
Catocala disjuncta Geyer (= *luctuosa* Stgr.). Middle heights, through summer. A day-flier.
Catocala eutychea Tr. Middle heights, scarcer than *C. disjuncta* Hübn.
Catocala hymenea Schiff. Bred in July from larvae on wild apricot (*Prunus*) on the south slopes of Jebel Kineseh above Hammana (W).
Anua tirhaca Cr. Beirut, May and June. Larvae on terebinth (W). Brummana, Aug. and November (E). Extends eastward into the desert, for it has been taken in April at Palmyra (W). Out here it probably feeds on the wild pistachio trees that grow in the desert mountains between Palmyra and Homs.
Ophiusa albivitta Alph. Beirut and Brummana, April to June.
Ophiusa algira L. Brummana and Shweir, July to Sept.; also at Shtorah in June (W). In Iraq I have found larvae of this species on pomegranate.

Grammodes rogenhoferi Bohatsch. Beirut (E), April, May.
Grammodes stolida F. 3.vi.33, Beirut (W).
Grammodes geometrica F. 31.iii.33, Beirut (W).
Clytie sancta Stgr. (* 1935). Beirut. In two or more broods, from March to July.
Clytie haifae Habich. One, Beirut, Aug. (W).
Clytie syriaca Warr. Dog River and Shtorah. June and July (W).
Pericyma squalens Led. Beirut, June (W).
Cortyta vetusta Walk. Beirut, June (W).
Cerocala sana Stgr. Beirut, March and October (W). Common on the sands.
Habrostola asclepiadis Schiff. *clarissa* Stgr., Zy.
Plusia circumflexa L. Amik, July (W); Beirut, Oct. (E). We also have an example from Bsherre. This species is certainly less frequent in the Lebanon than in Iraq and Kurdistan (W).
Plusia gamma L. On coast, October to March.
Plusia chalcites Esp. On coast, June. Also at Brummana in Sept. and Oct. (E).
Plusia ni Hübn. On coast and in Bekaa, March to May.
Plusia (*Phytometra*) *generosa* Stgr. Bsherre Cedars, early June (W).
Plusia accentifera Lef. Bsherre, Zy; Beirut, Oct. (E).
Plusia circumscripta Frey. Bsherre Cedars, early June, and Bekaa, Sept. to Oct. (W).
Plusia emichi Rog., Zy.
Scoliopteryx libatrix L. Ghadir, March (W). One example.
Pandesma anysa Guen. Beirut, April to June (W).
Apopestes spectrum Esp. (det. Brsn.). Common at middle heights in Sept. Larvae mature end May (W).
Autophila libanotica Stgr., Zy. Probably red form of *A. depressa* Pgr. (teste Brsn.).

Autophila ligaminosa Ev. subsp. n. **rhodochroa** Boursin (Pl. 1, fig. 9).

"Cette race se distingue des formes *subligaminosa* Stgr. et *ankara* Swinh. d'*A. ligaminosa* Ev. (bona sp.) par sa taille légèrement plus grande et sa teinte rougeâtre accentuée, qui la fait ressembler exactement à un *A. maura* Stgr. C'est à cette forme de *ligaminosa* qu'il faut, du reste, rapporter les signalisations d'*A. maura* Stgr. de Syrie et du Liban, *maura* n'ayant jamais à ma connaissance été trouvée authentiquement en Asie. L'armure génitale est absolument identique chez cette forme que chez les *ligaminosa* typiques" [C. Boursin].

Holotype: ♂ Jebel Sannin, 23.viii.33; in coll. Wiltshire.
Allotype: ♀ Bsherre Cedars, 14.viii.31; in coll. Ellison (Pl. 1, fig. 9).
Paratype: ♂ Bsherre Cedars, 19.v.34; lex (W); in British Museum.

Autophila limbata Stgr. (det. Brsn.). Middle heights (Shweir (W) and Bsherre (Zy)). Its range extends eastward across the desert towards Mosul (W).
Autophila cerealis Stgr. (det. Brsn.). Beirut, 18.iii.34 and Bludan, 1.vi.36 (W), J (Brsn.). This species does not appear in Amsel's list but is common in Transjordan and Palestine.
Autophila sp. n. nr. *cataphanes*.
1 ♂ Shweir (W), 16.vii.33, 1 ♂ Bsherre Cedars (E), 22.vi.30.
1 ♀ Brummana (E), vi.1931, 1 ♀ Bsherre Cedars (W), 19.v.34. M. Boursin will shortly describe this species.
Exophila rectangularis Hübn.-G. Beirut, April.

Anophia leucomelas L. One, Beirut, Nov. (W).
Aedia funesta Esp. Beirut, April and Oct. Shweir, June (W). Hasroun, Brummana, June, July and Oct. (E).
Rivula tanitalis Rebel. Dog River, Oct. (W).
Zethes insularis Ramb. Shweir, July, Aug. (W). Brummana, July, Sept. (E).
Plecoptera (*Tephrochares, Madopa*) *inquinata* Led. Shweir, June to Sept. (W). Bsherre, Zy.
Hypenodes costaestrigalis Steph. Arayah, Dec. (W).
Hypena obsitalis Hübn. Everywhere, even in the high mountains (Sannin) (W), and every month except January.
Hypena lividalis Hübn. Beirut, January to June; Brummana, June and July.
Hypena munitalis Mann. Wadi'l Berdaouni, 25.v.31 (E).
Hypena rostralis L. f. *palpalis* F. (det. B.-S.). Brummana and Kineseh, odd specimens in June (E). Shtorah, one flying in sunlight, 10.iv.34 (W).
Herminia crinalis F. (det. B.-S.). Common in lanes, Shtorah, Sept. (W). Beirut, April to June (W). Brummana, June, July and Sept. (E).

B.-Salz's determination refers to Shtorah insects and he has not seen all our material from other localities. We must therefore admit the uncertainty of the above name for all the localities mentioned, in the absence of a thorough revision of this difficult group. All the above specimens, however, do, to our inexpert eyes, resemble each other, except for a certain variability in size.

Geometridae.

Myidodes interpunctaria H.-S. Beirut, March (W).
Aplasta ononaria Fuessl. One or two as early as April, from the Dog River and Brummana (E). At middle heights, and at Zahle, etc., its usual time of flight is June and July, and at the Bsherre Cedars, at Sannin, and even at Hasroun, it flies on into August.
ab. *berytaria* Stgr. One worn example from Beirut, March; at Arayah, April (E). At Bwarij on Kineseh in May. At Bludan (W), 1.vi.36. Has not been seen by us later than this date. It appears two or three weeks earlier than *A. ononaria*, and has a shorter season (E). More material is needed to prove that this is a good species, which seems possible from what we know of it.
Orthostixis cribraria Hübn. Shweir, June to Aug. (W). Brummana, July and Sept. (E).
Pseudoterpna coronillaria Hübn. Coast and middle heights, June to Dec.
Comibaena neriaria H.-S. Middle heights and Bekaa, June to Sept. Bludan, 31.v.36 (W).
Culpinia prouti Th.-Mieg, Zy.
Chlorissa pulmentaria Guen. Generally distributed and common, May to Nov.
Microloxia herbaria Hübn. subsp. *advolata* Ev. Beirut, Arayah, autumn (W). Brummana, July to October (E).
Holoterpna pruinosata Stgr. Brummana, July and September, three only (E).
Thalera fimbrialis Scop. Middle heights, June, July (W).
Eucrostes indigenata Vill. A dwarf specimen in Beirut (W). Common at middle heights, June, July and Oct.
Xenochlorodes olympiaria H.-S. June, July (E). Brummana, common.
Hierochthonia pulverata Warr. (det. Prt.). Middle heights and Bekaa, July (W).

Rhodostrophia tabidaria Z. Coast and middle heights, May. Bludan (W), 31.v.–1.vi.36.

Problepsis ocellata Friv. Middle heights, May to July, and again in Sept. and Oct. Beirut, Nov.

Scopula turbulentaria Stgr. (det. Prt.). Bekaa, Sept. (W).

Scopula ochroleucaria H.-S. (det. Prt.). Beirut, November, two (W).

Scopula beckeraria Led. (det. Prt.). Bekaa, May, July, and Oct.–Nov. (W).

Scopula marginepunctata Goeze. Coast and hills, May to Dec.

Scopula luridata Z. Commonest at Beirut in winter and spring, and at middle heights in August. The larva feeds at night not only on *Silene* and its relatives, for I have found them commonly at Beirut on *Solanum*; probably polyphagous.

Scopula submutata Tr. subsp. *taurilibanotica* Wehrli. Middle heights, July to Oct.

Scopula flaccidaria Z. Amik marsh, May to Sept. (W).

Scopula imitaria Hübn. subsp. *syriacaria* Cul. Coast and middle heights, Oct.

Glossotrophia confinaria H.-Sch. subsp. *uberaria* Zy (det. Prt.). 12.vi.30, Bsherre Cedars, one (E).

Glossotrophia asellaria H.-Sch. Wehrli (1934, *Mitt. Münch. ent. Ges.* **24** : 7) records var. *semitata* Prt. of this species as numerous in Beirut. This is certainly not so now, and I assume that this is yet another case of vague labelling; anything sent by Cremona to Staudinger in pre-war days might appear so labelled, and very possibly the species occurs not in the Lebanon, but the Anti-Lebanon; the type of *semitata* Prt. is said to come from Baalbek.

Sterrha ochrata Scop. Wehrli records this species from Zahle (1934, *Mitt. Münch. ent. Ges.* **24** : 7).

Sterrha rufaria Hübn. (det. Prt.) and subsp. ?. Beirut delta, June (W). A deep red-brown form, heavily marked, especially on the underside.

From Neba Barada (early June) I have two examples with lighter markings and a lighter colour, that apparently belong here: they agree exactly with three examples taken at about 6000 ft. in Kurdistan, and might eventually prove to be a distinct species.

Sterrha consanguinaria Led. (det. Prt.). Shweir, Hammana (W); Brummana and Sannin (E). Ab. *consecrata* Stgr. appears regularly at Shweir as a minority aberration.

Sterrha moniliata Schiff. One, at Shweir, June (W).

Sterrha dimidiata Hufn. subsp. *tauricola* Wehrli. One at Amik, June (W). This example became too damaged in the killing bottle to tell whether or not it belongs to subsp. *antitaurica* Wehrli, which Zy records from Bsherre. The name for this race is *tauricola* Wehrli.

Sterrha striolata Stgr. (det. Prt.) (Pl. 1, fig. 17). 27.v.34, Amik, and 11.x.34, Dog River (W). Prout wrote: "The photograph of the type does not suggest quite such an incised hind-wing margin; otherwise the match is excellent, one might say *perfect*. I have never seen the original."

Sterrha camparia H.-S. Common on coast and at middle heights, May to Oct. (W).

Sterrha gracilipennis Warr., Zy.

Sterrha sublongaria Stgr. (det. Prt.). Coast sands, to light, or by day among dead fronds in clumps of *Saccharum egyptiacum*. March and late Oct. (W).

Sterrha maronitaria Zy., Zy.

Sterrha tineata Th.-Mieg. (det. Prt.). Brummana, and one from Bsherre Cedars (E); Shweir, June to Aug. (W).

Sterrha obsoletaria Ramb. (det. Prt.). Coast and middle heights, May to Sept. (W).

Sterrha troglodytaria H.-S. (det. Prt.). Beirut, April, May and Oct. (W); Brummana, Sept. (E).

Sterrha ruficostata Zy. f. *incarnaria* H.-S. (det. Prt.) and subsp. n.? Greyish and pinkish-grey examples are common from March to Aug., coast and middle heights, and vary greatly in size. From Bludan (W) (31.vii.34) come two yellowish examples, coloured rather like an average *S. obsoletaria* Ramb., which Prout regards as "weakly marked *ruficostata* with the terminal line virtually obsolete." They may well represent the Anti-Lebanon race of this species, but more material from this area is necessary to be sure of this point.

Sterrha purpureomarginata Bohatsch (det. Prt.). Shweir, late July and August (W).

Sterrha affinitata B.-Haas (det. Prt.) (* 1935). Beirut, May. Bred imagines, July and Aug. To judge from the larvae, this is a distinct species from *S. herbariata* Fabr. Most of the Beirut moths have a larger discal dot, and thicker postmedial line than the *S. affinitata* from Bsherre sent to the British Museum by Dr. Zerny (W). One example from Brummana (E) taken in July better resembles that specimen.

Sterrha elongaria Ramb. (det. Prt.). Beirut, May, June (W). I understand Wehrli in 1934, *Mitt. Münch. ent. Ges.* **24** : 10, to refer Lebanese examples to subsp. *seitunensis* Prt. (= *antitaurica* Wehrli, nom. preocc.).

Sterrha trigeminata Haw. subsp. *tenuirussata* Zy. Beirut, June, Shweir, Sept. (W). Zerny described the race from Bsherre; I have not seen his type of this but assume that my examples belong to it.

Sterrha filicata Hübn. Beirut, April and May; Shweir, Aug. (W); Brummana, Aug. and Sept. (E).

Sterrha intermedia Stgr. Beirut, May; Shweir, July (W).

Sterrha capnaria Püngl. (det. Prt.). Shweir, July; scarce (W).

Sterrha holliata Homb. (det. Prt.) (* 1936). Shweir, June (W). Early stages, 1936, *Ent. Rec.* **48**.

Sterrha degeneraria Hübn. f. *erschoffi* Christ. Middle heights, May to Aug. The larva is identical with that of the English race (W).

Cosymbia puppillaria Hübn. Coast and middle heights, all summer. Ab. *gyrata* Hübn. occurs.

Cosymbia punctaria L. Shweir, Brummana, in August.

Rhodometra sacraria L. On the coast commonest in the winter months. Larva on polygonum. Richly variable, whereas in neighbouring Iraq it varies little (W).

Larentia clavaria Haw. (= *Ortholitha cervinata* Schiff.) subsp. *pallidata* Stgr. (* 1936). Beirut, autumn and winter (W). A very slight difference in the genitalia distinguishes this race from *L. clavaria* Haw. and subsp. *dativaria* Oberth., as shown in a drawing by A. H. Stringer kindly communicated by him to me, but Prout does not think this alone sufficient to make subsp. *pallidata* Stgr. a distinct species. The unusual variability of subsp. *pallidata* Stgr. larva (described in 1936, *Ent. Rec.* **48**) is interesting, but this also by itself does not, in my view, suffice. The insect's facies differs somewhat from that of *L. clavaria*, and it is certainly a very good subspecies. [It occurs also in Cyprus.]

Ortholitha subvicinaria Stgr. *brunnescens* Prt. One ♀, Bsherre Cedars, 3.vi.36 (W). Had Zerny seen the type of this subspecies and the type of *O. libanaria* Prout, both of which are in the British Museum, he would not have described the geometers that he, Pfeiffer and Schawerda collected here in June as *O. subvicinaria* subsp. *libanaria* Prt., nor have said "*libanaria* ist zweiffellos nur eine hellere mehr sandfarbene Rasse von *subvicinaria*." The second example of *O. libanaria* is still to be caught, and the exact type locality is unknown.

Ortholitha libanaria Prt. Only one example of this rare species is known, caught by Mrs. Nicholl in the Lebanon over thirty years ago. The hind-wings lack the postmedial fascia which distinguishes *O. subvicinaria* Stgr., to mention only one character.

Anaitis obsitaria Led. One ♀, 3.v.30, Jebel Kineseh (E). A clearly marked, red-brown specimen, with grey-brown hind-wings.

Anaitis obsitaria ab. (nec. subsp.) *evanescens* Wehrli, One ♂, 3.vi.36, Bsherre Cedars (W).

I suspect that if a large series were collected from the Lebanon, the form *evanescens* would not be found to represent the race. Our two examples, though from different localities, probably represent the two extremes of variation of a race whose chief character, if any, is the rosy-brown colour of the markings, whether clear or evanescent. In another series taken by myself in the Kurdish mountains the same range of intensity of marking is to be found, the only difference being the colder tint of brown in those examples.

Anaitis mundata Stgr. (* 1935). Common at middle heights in Sept., into October at Dog River mouth (W). Larva on *Hypericum serpyllifolium* in April (W).

Anaitis plagiata L. Middle heights and Bekaa, May to Oct.

(*Triphosa sabaudiata* Dup., Zy.)

Oulobophora externata H.-S. subsp. *turcosyrica* Wehrli (* 1935). Beirut, and elsewhere on coast, common in April on rocky ground (W). Larva on terebinth, in May (W).

Thera variata (Schiff.) subsp. *subtaurica* Wehrli. Bsherre Cedars, June.

Chloroclysta miata L. (det. Prout). One Bsherre Cedars, May (W). Prout writes: "A good ab., but rather approaching Culot's figure of *alpinata*."

Xanthorhoe fluctuata L. From Beirut to Bsherre Cedars.

Xanthorhoe disjunctaria Lah. *pseudogaliata* Stgr. (det. Prt.). Two, 7.x.34, oak woods, Aley. A beautiful form, with orange-brown band and basal patch (W). A longer series of the blackish-banded form, from Brummana and Suq el Gharb, Oct. (E).

Xanthorhoe obstipata F. Beirut, commonest in winter and spring. Also from Kyrenia, Cyprus (W). Brummana, Sept., one (E). Bsherre (Zy).

Xanthorhoe salicata Hübn. (det. Prt.). At Beirut, in two winter broods. At middle heights, March and Oct. Ab. *ablutaria* Boisd. from Aley in Oct. Some coast specimens approach to this. Larvae on *Rubia olivieri* on the coast.

Xanthorhoe schneideraria Led., Zy.

Coenotephria juvenilata Zerny, Zy.

Coenotephria ludificata Stgr. (not *reclamata* Prt.). Bsherre Cedars, May and Oct. (W).

Coenotephria adlata Stgr. (* 1935) (det. Prt.). From coast to Anti-Lebanon, in autumn. Larva on *Poterium spinosum* in early spring (W).

[*Coenotephria callidaria* Joannis. Prout considers this to be perhaps a remarkable aberration of the foregoing.]

Euphyia basochesiata Dup. subsp. *cupreata* H.-S. (* 1935). Coast and middle heights, autumn to early spring. Also in Cyprus, N. Coast (W). Larva on *Rubia olivieri*. Extremely variable; three forms, at least, occur: a black-banded form with pale ground colour; a red-brown banded form with pale ground colour; and a red-brown form, the ground colour being brown-suffused, and the basal patch and middle shade, as a consequence, less outstanding.

Euphyia bilineata L. Middle heights, June and Sept.

Euphyia putridaria H.-S. Beirut River gorge and middle heights, May to July. Bsherre Cedars (Zy).

Euphyia polygrammata Bkh. Bekaa, Nov. (E,W).

Epirrhoe galiata Schiff. subsp. *orientata* Stgr. Shweir, Aug. to Oct. (W). Zerny records it from Bsherre.

Eupithecia spadiceata Zy. (det. Prt.). Shweir, Bsherre Cedars, June (W). Prout thinks it premature to sink *E. spadiceata* Zy. to *E. maeoticaria* Boh., as some continental Lepidopterists are inclined to do, and discusses the two at some length in Seitz (Suppl.) **4**: 197, 198.

Eupithecia deverrata Dietze *prouti* Zy., Zy.

Eupithecia schiefereri Boh. (det. Prt.). Beirut, Feb., March (E,W).

Eupithecia silenicolata Mab. *perdistincta* Wehrli, Zy.

Eupithecia spissilineata Metzn. Luize, above Asfuriyeh, April. One worn specimen (W). Zy records it from Bsherre.

Eupithecia quercetica Prout, 1938, Seitz (Suppl.) **4**: 204, pl. XIV, fig. 1 (Pl. 1, fig. 18).

Length of a fore-wing, 11 to 12 mm. Palpus almost twice as long as diameter of eye; pale beneath, as also the pectus. Abdomen dorsally with some brown admixture, especially on the crests.

Fore-wing a trifle narrower than in *E. abbreviata* Guen., but not so elongate as in *E. unedonata* Mab.; grey, only costally more tinged with brown, the markings there thickened somewhat as in *E. virgaureata* Dbld.; cell-spot fairly strong, though not so large as in *E. virgaureata*; markings somewhat as in *E. abbreviata*; antemedian without band-like shading; postmedian with proximal dashes present, but short and pretty regular (more as in *E. virgaureata* than in *E. abbreviata*); subterminal dentate, not much inbent near costa; fringe somewhat spotted on proximal half. *Hind-wing* shaped much as in *E. abbreviata*; cell-spot distinct. Underside much as in *E. abbreviata*, but greyer.

Arayah, (Lebanon), 2 ♀♀, bred 22.ii. and 1.iii.1935, from larvae found feeding on oak (*E. P. Wiltshire*). They are found at middle heights in the Lebanon in April and May, and their discoverer records them also on buckthorn, hawthorn and cistus: apparently similar in build and in type of maculation to those of *E. abbreviata* and *E. massiliata*, occurring in at least two forms: the one ochreous with a pink tinge and with yellowish or white oblique lateral marks, edged in front with pink; the other darker, with the dorsal line developing a series of purplish V-marks pointing forward, blackish-grey under the lateral dashes. Early stages in 1936, *Ent. Rec.* **48** (Suppl.).

Eupithecia pimpinellata Hübn. (det. Prt.) subsp. Bsherre Cedars (W).

Eupithecia dodoneata Guen. subsp. *dubiosa* Dietze (det. Prt.) (* 1936). Beirut, March. Larvae on terebinth, April (W). Early stages described in 1936, *Ent. Rec.* **48** (Suppl.).

Eupithecia extremata F. (det. Prt.). 3.vi.36, Bsherre Cedars (W).
Eupithecia irritaria Stgr. (det. Prt.). Shweir, Sept., Oct.
Eupithecia laquearia H.-S. (det. Prt.) (* 1936). Shweir and Brummana, July, Aug., Oct. Larvae on *Hypericum* (W). Early stages described in 1936, *Ent. Rec.* **48** (Suppl.).
Eupithecia syriacata Stgr., Zy.
Eupithecia distinctaria H.-S., Zy.
Eupithecia gemellata H.-Sch. *mystica* Dietze, Zy.
Eupithecia vulgata Haw. *montium* Dietze, Zy.
Eupithecia centaureata Schiff. *centralisata* Stgr., Zy.
Eupithecia ultimaria Boisd. Beirut, March, April and Sept.–Oct.
Eupithecia unedonata Mab. (det. Prt.). Ghadir, March; and Bsherre, April (W). Ab. *autumnalis* Dietze (det. Prt.). Smaller, and with less pointed wings: from Brummana, 16 and 17.x.31 (E). This species has also been recorded from Zahle.
Gymnoscelis pumilata Hübn. General and common.
Bapta distinctata H.-S. (= *pictaria* Curt.) subsp. *orientalis* Stgr. Coast and middle heights. Larva mature in April or early May (W).
Ennomos quercaria Hübn. Shweir and elsewhere at middle heights, June to Aug. (W). Bsherre Cedars (Z).
Eumera regina Stgr. Beirut, Nov., one (W).
Dasycorsa modesta Stgr. (* 1935). Coast and middle heights, Jan. to April (W). Larvae on broom and other Papilionaceae, April–May (W).

Dasycorsa modesta Stdgr. ab. **astigmatica** Wiltshire ab. n.

♀: fore-wing lacks the discal spot.

Holotype 26.i.33, Beirut, in *coll. mea* [E. P. Wiltshire].

Crocallis tusciaria Bkh. Coast, middle heights, Bsherre Cedars, and Bekaa. Also at Kyrenia, Cyprus. Oct. to Dec. Larvae mature in May (W).
Pseudopanthera syriacata Guen. From Dammur River to Antioch, on all rough ground where *Teucrium* grows, at middle heights and down to sea-level in river gorges; even on bare uplands, as at Calaat Simaan, near Aleppo. March, April (W).
Semiothisa aestimaria Hübn. Common at Beirut, from early spring onwards. Very variable. Larva on tamarisk (W).
Erannis bajaria Schiff. Bsherre Cedars, late Oct. One ab. *sorditaria* Hübn., as well as the typical form. Beirut, Dec. (W).
Zamacra flabellaria Heeger. Beirut, Dec. to March (W).
Phaselia deliciosaria Led. Beirut, one ♂, 27.iv.30 (E).
Nychiodes amygdalaria H.-S. Brummana, 23.viii.31 (E); Shweir, 30.vi.33 (W); Bludan, 31.v.36 (W). Scarce.
Nychiodes palaestinensis Wagn. (= *persuavis* Wehrli) (det. Prt.). Brummana (R.E), Shweir, June, July (E.W), Dog River, Oct. (E.W). These do not quite agree with Zerny's account of his subsp. *libanotica*, described from Bsherre Cedars, but certainly come under this species.
Boarmia rhomboidaria Schiff. subsp. *syritaurica* Wehrli. Coast to Anti-Lebanon.
Boarmia selenaria Schiff. Dog River, June (W); Brummana, Sept.–Oct. (E).
Boarmia secundaria Esp. subsp. *syriaca* Wehrli. One ♂ taken at Bsherre Cedars 15.viii.31 (E). Differs from *B. rhomboidaria* Schiff. in the much more bipectinate antennae, and on the underside, where the discal spots

are fainter, the postmedian zigzag line clearer and uninterrupted, and the whole appearance duller and more unicolorous.

Boarmia umbraria Hübn. (det. Prt.). Bsherre, Zy.; Bludan, 1.vi.36 (W).

Gnophos dubitaria Stgr., Zy.

Gnophos stevenaria Boisd. Middle heights, and Baalbek, May to Sept.

Gnophos sartata Tr. Generally distributed and common.

Gnophos variegata Dup. subsp. *subtamicus* Wehrli. Dog River mouth, hills, and Bekaa common.

Gnophos poggearia Led. (* 1935). Middle heights, May to July. Zy records this race from Bsherre. Larva on buckthorn (W).

Gnophos libanotica Wehrli. Bsherre Cedars, Dohr el Baida, and the Bekaa. April to Aug.

Gnophos pfeifferi Wehrli. Bsherre Cedars, early June, two (W).

Selidosema plumaria Schiff. Middle heights, Sept. and Oct. Some only are ab. *syriacaria* Stgr., which name cannot therefore be regarded as subspecific, at least not with reference to Lebanese examples.

Itame berytaria Stgr. (* 1935). Beirut, Nov. and Dec. Not noted in hills, not even at Luize, which is only 800 ft. (W.). Larva on *Calycotome villosa* in spring (W).

Tephrina perviaria Led. One, in June, at Beirut (W).

Tephrina pumicaria Led. Brummana (E); Shweir, July to Sept. (W).

Dyscia conspersaria Schiff. *turturaria* Boisd. One, at Shweir, in Oct. Larvae mature at Antioch in April (W). One from Kineseh, mid-June (E).

Aspilates ochrearia Rossi. Luize (above Asfuriyeh), April (W).

Part III.

Pyralidae and Microlepidoptera.

By E. P. Wiltshire.

Zerny's list of Pyralidae and Microlepidoptera is so far longer than ours that we have refrained from quoting those species recorded in it and not taken by ourselves. It is indispensable, therefore, for those interested in these families to refer to 1934, *Iris*, **48**; our list adds several new species, and sheds some light on the distribution in Syria of some of those species recorded by Zerny from Bsherre, but gives no such complete idea of the microlepidopterous fauna of the Lebanon as does Zerny's. The list of microlepidoptera given in the systematic section of Amsel's *Die Lepidopteren Palästinas*, 1933, is the best part of that section. With Amsel's, Zerny's, and our own list before him, the student of Lebanese microlepidoptera should be able to form a rough idea of his field of study.

Crambinae.

Ancylolomiat entaculella Hübn. (det. Zy). From coast to Bekaa, Sept. and Oct.

Ancylolomia syriaca Rebel. At middle heights and in the Bekaa, Sept. and Oct.

Crambus chrysocrossis Meyrick (Type) (Pl. 1, fig. 12). 3.vi.34, Bwarij (W). Described in 1936, *Exot. Microlep.* **5** : 18.

Crambus syriellus Zerny (det. Ams.). Luize, early May (W). We also have a series from Neba Barada in late May, taken too late to send to Amsel for determination, which may either be this or the following species which is very similar superficially (W). The same applies to two taken on Jebel Kineseh in late May (E).

Crambus craterellus Scop., Zy.
Crambus monotaeniellus H.-S. Beirut, sand and pine district, end Oct. (W).
Crambus pinetellus L. Brummana and Shweir, Sept.
Crambus graphellus Const. (det. Zy). 13.x.34, Amik, one (W).
Crambus perlellus Sc. 26.vii.33, Kineseh, one (W).
Crambus geniculeus Haw. (det. Ams.). Middle heights, Sept. and Oct. (W).
Surattha obeliscota Meyrick (Types) (Pl. 1, fig. 14). Two, at light, Beirut, in the pine and sand district, late Oct. (W). Described in 1936, *Exot. Microlep.* **5** : 21.
Diatraea luteella Motsch. (det. Meyr.). Common to light in early July, Amik (W). This species seems to be confused on the Continent with *Crambus hierichunticus* Z., for these examples were returned to me so determined, or rather as *Calamotropha hierichuntica* Z. Examination of the type of the latter, however, at the British Museum convinced me this determination was wrong; Meyrick, in determining them as above, wrote: "*Crambus hierochunticus* Z. is spelt wrongly in Staudinger's Catalogue (the right spelling is *hierichunticus*, being formed from the Greek name for Jericho). The catalogue entirely omits the reference to 1867, *Trans. ent. Soc. Lond.*, **1867** : 454, Plate XXIII, where Stainton gives an English description and coloured figure. The ♂ h-wings show a dark glandular spot near the termen, which is absent in your specimens . . . which are not *Crambus* at all, vein 7 of F.W. being separate. In my opinion they are *luteella* Motsch., which ranges from Egypt to the Malagar Islands, China and Japan; placed in Staudinger's catalogue and other writers as a *Chilo*, but truly a *Diatraea*, a large genus, mainly tropical. The larva lives in the stems of water-plants, and the curious ovipositor doubtless inserts the egg in the base of a leaf-sheath."

It is a large, wainscot-like moth, with very different sexes, and I have also taken it in Rowanduz Gorge in Kurdistan, which may be its northernmost limit in the west Palaearctic zone.
Platytes carectellus Z. (det. Ams.). 2.vii.34, Amik, one (W).
Arissa ramosella H.-S. 1.vii.34, Amik, one (W).
Eromene ocellea Haw. Beirut, especially in the winter months; also from Cyprus.
Eromene bella Hübn. 27.viii.33, Shweir (W); July and Sept., Brummana (E).
Eromene ramburiella Dup. 21.x.34, Dog River (W).
Thyridophera furia Swinh. (det. Zy). 13.vi.34, Dog River, one (W).

Phycitinae.

Myelois ceratoniae Z. (det. Zy). Beirut, Luize, April (W).
Myelois cribrella Hübn. General, from coast to Bekaa, March to Oct.
[*Rhodophaea marmorea* Haw. var. *lugens* Stgr. (det. Zy). 12.v.34 Baalbek (W); Bludan, 1.vi.36, two (W).]
Terobasis glaucella Stgr. *anatolica* Car. 14.ix.33, Shweir (W); Brummana, July (E).
Acrobasis bithynella Z. (det. Zy.). 11.x.34, Dog River (W).
Acrobasis obtusella Hübn. (det. Zy.). Beirut, late April (W).
Phycita diaphana Stgr. Beirut, Oct. (W).
Phycita poteriella Z. (det. Zy.). Dog River and middle heights, June and July.
Salebria semirubella Dup. Amik, June, July and Aug. (W); Brummana (E).
[*Adelosemia subsoritella* Rag. (det. Meyr.). 31.v.36, Bludan (W).]
Nephopteryx divisella Dup. Beirut, June and July (W).

Etiella zinckenella Tr. (det. Zy). Bekaa, Aug. (W); Brummana, July (E).
Euzophera osseatella Tr. (det. Zy). 19.x.33, Beirut (W).
Euzophera immundella Rag. (det. Zy). 30.viii.33, Shweir (W).
Euzophera pinguis Haw. 27.v.34, Amik (W).
Homoeosoma nitidella Rag. (det. Zy). 6.ix.33, Shweir (W).
Homoeosoma subalbatella Mn. (det. Zy). 19.x.33, Beirut (W).
Homoeosoma pinguinella Zerny. Described from Bsherre and the Cedars. Shweir, 11.viii.33 (W).
Plodia interpunctella Hübn. 12.xi.34, Bekaa (W).
Macalla lophotalis Hamps. (det. Zy). Late June and early Aug., two examples (W), Shweir, Bsherre, Zy.

ANERASTIINAE.

Polyocha venosa Z. Shweir, Aug.–Sept. (W).
Ematheudes punctella Tr. At middle heights and in the Bekaa, July and Aug. (W).
Anerastia ablutella Zell. 12.viii.34, Bekaa (W).
Epidauria discella Rag., Zy.
Lamoria anella Schiff. Beirut, April, May and Oct.; Shweir and Brummana, June to Aug.
Galleria mellonella L. May and June, Oct. and Nov., Beirut (W); Brummana, Sept. (E).
Melissoblaptes bipunctatus Z. (det. Zy). Lebanon, exact locality unknown (W).
Melissoblaptes opticogramma Meyr. (Types) (Pl. 1, figs. 15 and 16). Shweir. June to Aug. (W). Described in 1936, *Exot. Microlep.* **5** : 22.
Achroia grisella F. (det. Zy). 2.xi.33, Beirut (W).
Arenipses sabella Hamps. Beirut, late April (W). Also bred from a larva found indoors among dates (W).
Treptopteryx pertusalis Hübn. Ain Sofar (E), Amik (W), Bsherre (W). Locally common, the males flying in the sun, the females best to be found by following a male hovering near the ground: as soon as he settles, he will be found to be already *in côp.* with one of the purple-brown females which rest unseen in the grass (W).
Dattinia colchicalis Led. (det. Zerny). 26.viii.33, Shweir (W). In the British Museum is an example from Zeller's collection, labelled in Zeller's handwriting "*Pyralis colchicalis*," which does not agree with the above specimen; two examples, however, also in the British Museum, from Limassol in Cyprus are identical with our specimen, which agrees well with Herrich-Schaeffer's figure of *D. colchicalis* Led. in his *Schmett. Europa*, **5** (Suppl. 136); Zeller's specimen differs from this in the more zigzag course of the postmedial line (W).
Endotricha flammealis Schiff. typical and f. *lutea* Tur. (det. Ams.). Coast and middle heights, May to Sept.
Hypotia corticalis Schiff. (det. Zy). Beirut, June; Schweir, Aug. (W).
Aglossa pinguinalis L. subsp. *asiatica* Ersch. (det. Zy.). Generally distributed from coast to Anti-Lebanon.
Aglossa rubralis Hamps. Beirut, May (W); Brummana, June (E); Bsherre, Zy.
Aglossa cuprealis Hübn. (det. Zy). 22.viii.33, two examples (W), Shweir.
Aglossa signicostalis Stgr. (det. Meyr.). vi.1931, Brummana, one (W).
Paraglossa costalis F. Beirut, May.
Pyralis farinalis L. Of general distribution.

Pyralis regalis Sch. (det. Ams.). One bright example, from Talabaya, 13.x.34 (W).

Stemmatophora subustalis Led. (det. Zy). Brummana (E), and Shweir (W), July; Bsherre, Zy.

Herculia fuscocilialis Dup. On the coast, in May and June; one smaller example taken in October (W). Brummana, June, July and Oct. (E).

Bostra syriacalis Rag. (det. Zy). Beirut, June; Shweir, Aug. (W).

Actenia honestalis Tr. Middle heights (W); also in the Anti-Lebanon (W), July.

Actenia brunnealis Tr. Shweir, Sept. (W). Resembles in colouring somewhat, as well as in habit, time, and place, the Geometer *Anaitis mundata* (W).

Botys (*Cledeobia*) *uxorialis* Led. Kartaba and the Bekaa, May (W). Brummana, Shweir, Bsherre Cedars, Jebel Kineseh (E). Dayflier.

Botys (*Cledeobia*) *isthmicalis* Led. Shtorah and Dohr el Biada, June. Bludan, end May (W.) Brummana, June (E). Nightflier.

Botys (*Cledeobia*) *consecratalis* Led. Amik marsh and Neba Barada, common in May. Dayflier (EW).

Botys (*Cledeobia*) *berytalis* Reg. Shweir, around broom, in Aug. and Sept. (W). Bsherre Cedars (E). Nightflier.

Duponchelia fovealis Zell. Beirut, common in April and in Sept.–Oct. (W).

Nymphula stratiotata L. Amik, May to July, with a smaller generation in Sept. (W).

Nymphula nympheata L. (det. Zy et Meyr.). A short series from Amik (W) in May and Sept., smaller, with rather ligher markings than the long series of *N. nymphaeata* in the British Museum (W).

Cataclystia lemnata L. Amik, July (W). Brownish examples.

Stenia bruguieralis Dup. Dog River and middle heights, July to October.

Stenia stigmosalis H.-S. 21.v.34, Ehden (W). Common in lanes at Bludan in early June (W). Bsherre and Bsherre Cedars (Zy.).

Cholius ochrealis Schiff. subsp. *cremealis* Zerny. Common at Bsherre Cedars in early June (W).

Scoparia dubitalis Hübn. (det. Zy). 28.vi.33, Shweir (W). Also on old cedar trunks in July, high up on Jebel Barouk (W). Bsherre, Zy.

Scoparia coprista Meyr. (Type) (Pl. 1, fig. 13). Taken on the wing after dark, 20.iv.34, Arayah (W). Described in 1936, *Exot. Microlep.* **5** : 18.

Scoparia ambigualis Tr. Cedar Mt., Bsherre, 14.viii.31 (E).

Hymenia recurvalis Fab. 14.xii.33, Beirut (W); Oct. (E).

Pagyda traducalis Z. Schweir, Aug.; Beirut, Oct. (W); Brummana, Sept., Oct. (E).

Ercta ornatalis Dup. From coast to Bekaa, Oct. and Nov. (W).

Margaronia unionalis Hübn. Coast and middle heights, May to July, and Oct.

Euclasta splendidalis H.-S. Brummana, Sept., one (E).

Hellula undalis F. Beirut, Oct. (W).

Nomophila noctuella Schiff. At all heights, and at most seasons.

Psammotis pulveralis Hübn. subsp. *grisealis* Stgr. Hammana, 16.vi.34; Bekaa, 12.viii.34 (W); Sannin, 19.vii.31, and Bsherre Cedars, 30.vi.31 (E).

Psara licarsisalis Walk. Beirut, common in early winter (W). Brummana, July to Sept. (E).

Loxostege nudalis Hübn. April to June, Beirut.

Loxostege stramineralis Hamps. Bludan; July (E, W); Bsherre, Zy.

Loxostege cruentalis Hübn. June and July, Nahr Ibrahim, Dog River, Jebel Barouk and Bludan (W); Beirut and Asfuriyeh (E).

Antigastra catalaunalis Dup. 4.v.33, Beirut; 4.x.34, Talabaya (W); Bsherre (Zy).

Noorda blitealis Walk. 16.v.34, Beirut (W).

Evergestis caesialis H.-S. (det. Zy). Bsherre Cedars in Aug.

Evergestis umbrosalis F.-R. Bsherre Cedars, flying by day in late May and early June, common but very local (W).

Uresphita polygonalis Schiff. Generally common, at widely different times.

Cynaeda dentalis Schiff. In May, June and Oct. from the coast; Shweir, Sept. Zerny records it from Bsherre as subsp. *gigantea* Warnecke.

Titanio pollinalis Schiff. subsp. *filialis* Zy. Common in late May and June at Bsherre Cedars (W).

Metasia perfervidalis Hamps. (det. Zy). Middle heights, July to September.

Metasia carnealis Tr. (det. Zy). Schweir, early Aug. (E, W).

Metasia subtilialis Car. (det. Zy). One, Beirut, 17.vi.34 (E, W); Bsherre (Zy); Bsherre Cedars, 15.viii.31 (E).

Metasia octogenalis Led. (det. Ams.). Dog River, 13.vi.34, one (E, W).

Metasia suppandalis Hübn. One unlabelled example (E). Probably middle heights, Oct.

Hapalia martialis Guen. (= *ferrugalis* Hübn.). Beirut, common in March and April; also from Brummana in early July (E). Larvae in late winter on *Verbascum* (W).

Hapalia silvalis Joannis. Bsherre Cedars, end June, one (E).

Pionea perfervidalis Hamps. (det. Zy). Shweir, July and Aug. (W).

Pionea institalis Hübn. (det. Ams.). Bsherre Cedars, July and Aug. (W).

Pionea languidalis Ev. (det. Ams.). Shweir, end July, one (W).

Cornifrons ulceratalis Led. Talabaya, 10.xi.34, one (W).

Pyrausta lutulentalis Led. (or P. *pistorialis* Zy.). Lederer's examples were described from "Damascus," which probably means the Anti-Lebanon. An example from Zeller's collection, labelled, in Zeller's handwriting, *lutulentalis*, is in the British Museum, with an example from Bsherre Cedars caught by Mrs. Nicholl. Zerny sent three examples of the insect described by him as *P. pistorialis* (from the Bsherre Cedars) to the British Museum. I am unable to distinguish these two species, and feel that the later name may prove to be a synonym of Lederer's, but until I have seen the type of *P. lutulentalis* prefer to leave the matter open.

Two worn examples from Bsherre, Aug. (E); one from Bludan, and May (W).

In the British Museum, under *P. subsequalis* H.-S., will be found two examples sent by Zerny as *P. lutulentalis*. Lederer's and Herrich-Schäffer's plates seem to support the British Museum's determination of these three species (or two), but it is of course possible that Zeller's *lutulentalis* is not identical with Lederer's type, or that Lederer described from a series containing two different species (W).

Pyrausta subsequalis H.-S. (= *lutulentalis* Zy). Shweir, late June (W); Bsherre Cedars, Aug. See above, under *P. lutulentalis* Led.

Pyrausta gutturalis Stgr. (det. Zy). Brummana, July, two (E). Hatched in Aug. from a larva found in July on honeysuckle at Shweir (W).

[*Pyrausta nubilalis* Hübn. (det. Ams.). Neba Barada, two dark small examples, 24.vi.34 (W).].

Pyrausta virginalis Dup. ab. *auroralis* Z. Luize, May (W). Brummana, July (E), Bsherre Cedars, Aug. (E).

Pyrausta cespitalis Schiff. *intermedialis* Dup. Coast to Bekaa, March to Nov.

Pyrausta aurata Sc. subsp. *meridionalis* Stgr. Beirut, March; Brummana, June (E); Amik, Sept. (W).
Pyrausta pauperalis Stgr. (det. Zy). Shtorah, early Nov. One only (W).
Pyrausta trinalis Schiff. Shweir, July (W).
Noctuelia vespertalis H.-Sch. subsp. *libanoticalis* Stgr. Common at the Bsherre Cedars, end May to June (W). One worn example from Sannin, July (E).
Noctuelia floralis Hübn. From coast to Anti-Lebanon (W). May and June.
Noctuelia superba Frey, Led, Zy.

Pterophoridae.

Trichoptilus siceliota Zell. (det. Str.). Beirut, bred from a larva on *Inula viscosa* (W), Oct. Bsherre and Brummana (Zy).
Trichoptilus congrualis Zell. (det. Str.). Shweir, Aug. (W).
Platyptilia rhododactyla Schiff. (det. Str.). Shweir, July (W). Bsherre, Zy.
Alucita baliodactyla Zell. subsp. *meridionalis* Stgr. (det. Zy). Aley, Shweir, and the Bekaa. July, Sept., Oct. (W). Autumn examples are smaller. Bsherre Cedars, Zy.
Alucita malacodactyla Zell. (det. Str.). 14.v.33, Beirut, two (W) Bsherre and Brummana, Zy.
Pterophorus monodactylus L. (det. Str.). Coast to Bekaa, June to Oct.
Marasmarcha ehrenbergiana Zell. (det. Str.). Beirut, June (W).
Agdistis tamaricis Zell. Beirut, common through the summer (W).

Phaloniidae.

Lozopera francillana Fab. (det. Str.). 4.viii. 34, Bsherre Cedars (W).
Phalonia rupicola Curt. (det. Str.). Hasroun, 16.viii.31, one (E).
[*Phtheochroa psychodora* Meyr. (Types) (Pl. 1, fig. 19). Two to light 31.v.–1.vi.36, Bludan (W). Described in 1936, *Exot. Microlep.* **5**: 23.]
Phtheochroa sodaliana Haw. (det. Str.). 15.iv.34, Bhamdoun (W).
[*Phtheochroa hybridella* Hübn. (= *carduana* Zell.). ♀, 1.vi.36, Bludan (W).]
Euxanthis meridiana Stgr. (det. Str.). 21.vii.34, Bludan (W), Bsherre, Zy.
Euxanthis diana Kal. (det. Str.). 25.v.31, eastern slopes of Jebel Sannin (E).
Euxanthis anticyphas Meyr. (Type) (Pl. 1, fig. 21). 31.x.31, Brummana (E). Described in 1936, *Exot. Microlep.* **5**: 23.

Tortricidae.

Cacoecia podana Scop. (det. Str.). 3.vi.34, hatched from a larva found on styrax on the lower eastern slopes of Jebel Barouk (W).
Tortrix imperfectana Led. (det. Str.). 10.v.31, Jebel Kineseh (E), Bsherre Cedars, Zy.
Tortrix costana F. (det. Zy). 3.xi.34, Bekaa (W).
Cnephasia tristrami Wals. (det. Zy). 29.iv.34, Beit Meri (W).
[*Cnephasia orientana* Alph. (det. Zy). 17.v.34, Baalbek (W).]
Peronea conterminana H.-S. (det. Zy). 4.x.34, Shtorah (W).
Peronea hastiana L. var. *costimaculana* Wocke (det. Str.). 23.vi.34, Shtorah (W).

Eucosmidae.

Argyroploce profundana Schiff. (det. Zy). 24.viii.33, Shweir (W).
Notocelia uddmanniana L. (det. Str.). 3.vi.34, Dog River (W), Bsherre (Zy).
Pelatea festivana Hübn. 16.viii.33, Shweir (W).

Laspeyresia exosticha Meyr. (Types) (Pl. 1, fig. 22). Two examples, one taken on the railway line below Bhamdoun, the other at Luize, both flying by day in mid April (W). Described in 1936, *Exot. Microlep.* **5** : 25.
Laspeyresia amplana Hübn. (det. Meyr.). Brummana, early Oct., one (E).
Laspeyresia pomonella L. (det. Str.). 21.vii.34, Bludan; no doubt common here and at Zebdani (W); Suq el Gharb, Oct. (E).
Laspeyresia grossana Haw. (det. Str.). 5.ix.33, Shweir (W).

GELECHIIDAE.

Platyedra vilella Zell. (det. Zy). March, Beirut, three (W).
Gelechia plutelliformis Stgr. (det. Str.). Beirut, common in May. Larvae on tamarisk (E, W).
Rhinosia flavella Dup. (det. Zy). April, Arayah (W).

COSMOPTERYGIDAE.

Limnoecia copidobathra Meyr. (Type) (Pl. 1, fig. 20). Brummana, July, one (E). Described in 1936, *Exot. Microlep.* **5** : 30.

OECOPHORIDAE.

Apiletria luella Led. (det. Ams.). 11.viii.33, Shweir (W), Bsherre and Brummana, Zy.
Pleurota sparella Led. (det. Str.). 10.vi.34, Amik (W), Bsherre and Brummana, Zy.
Depressaria comitella Led. (det. Str.). Beirut (W); Brummana (E); July.
Depressaria scopariella Hein. (det. Zy). Bred in May from a larva beaten at night in late April from *Calycotome villosa*, Arayah (E, W).
Depressaria subpropinquella Stn. (det. Str.). Beirut, March and Nov. (E, W).
Depressaria irrorata Stgr. (det. Str.). Beit Meri, April (W), Bsherre, Zy.
Depressaria nervosa Haw. (det. Str.). Bsherre Cedars, late Oct. (W).

ORNEODIDAE.

Orneodes palodactyla Zell. (= *grammodactyla* Zell.) (det. Str.). Brummana, July, two (E); Luize, May (W).
Orneodes zonodactyla Zell. (det. Zy). Bsherre Cedars, 19.v.34 (W).
Orneodes hexadactyla Linn. (det. Str.). Shweir, July (W).

SCYTHRIDAE.

Scythris acanthella Gdt. (det. Str.). 18.vi.34, Beirut; 28.vii.34, Bekaa (W).
Scythris productella Zell. (det. Str.). 29.iv.34, Bekaa (W); 25.v.31, East Sannin (E).

HYPONOMEUTIDAE.

Ethmia bipunctella Fab. (det. Str.). Beirut, Antioch, April, May and Oct. (E, W).

PLUTELLIDAE.

Orthotaelia sparganella Thunb. (det. Str.). 1.vii.34, Amik, two (W).

TINEIDAE.

Episcardia lardatella Led. 30.vii.34, Beirut (W).
Tinea chrysopterella H.-S. Bsherre Cedars, late May to early June (W).
Tinea granella L. (det. Str.). Barouk Cedars, one, July.
Penestoglossa dardoinella Mill. (det. Meyr.). Brummana, 24.viii.31 (E).

ADELIDAE.

Nemotois fasciella Fab. (det. Str.). Beirut, 14.v.33; in the Nahr Beirut gorge, flying in sunshine over wild lavender (W).

Nemophora istrianella H.-S. 18.v.30, Kineseh, and 3.iv.31, Nahr Ibrahim (E).

EXPLANATION OF PLATE 1.

FIG. 1. *Macrosia wiltshirei* Tams sp. n. (Bsherre Cedars).
2. *Amathes hypotaenia* subsp. (an. ab. ?) *wiltshirei* B.-Salz, ♀ pale-banded form (Arayah).
3. *Amathes hypotaenia* B.-Salz, typical form (Arayah) ♀.
4. *Elaphria hedychroa* Brsn. (Bsherre Cedars).
5. *Elaphria vicina* subsp. *rosea* Brsn. (Jebel Sannin) holotype ♂.
6. *Rhyacia iobaphes* Brsn. (Shweir) holotype ♂.
7. *Archanara geminipuncta* subsp. *wiltshirei* B.-Salz, rather small but typically marked ♀, paratype (Amik).
8. *Euxoa heringi* subsp. *maronitica* Wilts. holotype ♂ (Bsherre Cedars).
9. *Autophila ligaminosa* Esp. subsp. n. Brsn. (Bsherre Cedars) ♀ allotype.
10. *Amathes macilenta* subsp. *rubrescens* Wilts. (Shtorah) ♀ allotype.
11. *Agrotis truculenta* Led. (Bsherre Cedars) ♂.
12. *Crambus chrysocrossis* Meyr. (× 2) (Bwarij) holotype.
13. *Scoparia coprista* Meyr. (× 2) (Arayah) holotype.
14. *Surattha obeliscata* Meyr. (× 2) (Beirut) paratype.
15, 16. *Melissoblaptes opticogramma* Meyr. (× 2) (Shweir) paratypes.
17. *Sterrha striolata* Stgr. (× 2) (Amik).
18. *Eupithecia quercetica* Prt. sp. n. (× 2) (Arayah).
19. *Phtheochroa psychodora* Meyr. (× 2) (Bludan) paratype.
20. *Limnoecia copidobathra* Meyr. (× 2) (Brummana) holotype.
21. *Euxanthis anticyphas* Meyr. (× 2) (Brummana) holotype.
22. *Laspeyresia exosticha* Meyr. (× 2) (Luize) paratype.
23. *Bryophila marginelota* Joan. (× 2) ♀ (Shweir).
24. *Thaumetopoea wilkinsoni* Tams (dark form) (Bsherre Cedars).
25. *Zygaena corycia* subsp. *wiltshirei* B.-Salz (Kineseh) allotype.
26. *Lemonia ballioni* subsp. *pontica* Strgr. ? (Brummana).

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